

MILL AND ELEVATOR OWNERS AND FLOUR BROKERS SEE PAGE 10.

CHICAGO OFFICE,  
40 La Salle Street.



MILWAUKEE OFFICE,  
124 Grand Avenue.

Published by  
B. HARRISON CAWKER. Vol. 25, No. 1. MILWAUKEE AND CHICAGO, MAY, 1888.

TERMS: \$1.00 a Year in Advance  
Single Copies, 10 Cents.

# The Case Improved Centrifugal Reel

\*\*\*\*\*

THE FINEST CONSTRUCTED and  
Most Satisfactory Working Machine Yet Built

Easy Running. Great Capacity. The Finest Work.  
Speckless Head. Superior Cloth Cleaner. Slow Motion.  
Takes But Little Power. Small Space Required. Automatic Feed.  
Superior Scalping Device. Over Loading Avoided.

## Our New IMPROVED ROUND REEL CENTRIFUGAL

Has beyond question more actually superior features and fewer defects  
than any other Centrifugal manufactured.

WRITE US FOR PRICES AND FURTHER INFORMATION.

Estimates on Flour or Corn Meal Mills on "Long" or "Short" Systems Carefully Given.

YOUR CORRESPONDENCE IS SOLICITED.

**THE CASE MANUFACTURING CO.,**  
COLUMBUS, OHIO.

When writing to us please mention the UNITED STATES MILLER.

"GOLD SEAL" RUBBER BELTING,



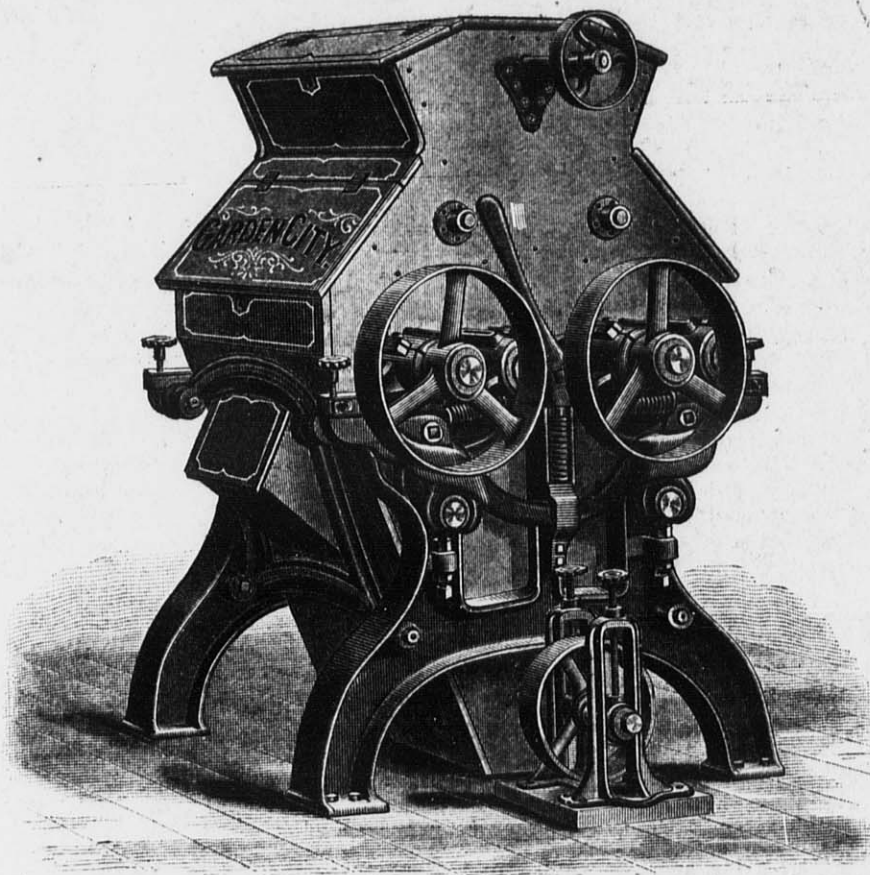
OAK TANNED LEATHER BELTING.

372 and 374 EAST WATER STREET,  
MILWAUKEE.

131 EAST THIRD STREET,  
ST. PAUL.

201 NICOLLET AVENUE,  
MINNEAPOLIS.

THE  
**Garden City Roller Mill**



Equal to any Roller Mill on the Market.

Perfect in Every Detail.



FOR PRICES, ETC., ADDRESS

❖ GARDEN CITY MILL FURNISHING CO., ❖  
**CHICAGO, ILL.**





Published by E. HARRISON CAWKER. { VOL. 25, No. 1. MILWAUKEE AND CHICAGO, MAY, 1888.

TERMS: { \$1.00 a Year in Advance.  
Single Copies, 10 Cents.

[Written for the UNITED STATES MILLER.]

[Copyrighted. All rights reserved.]

# POWER TRANSMISSION MACHINERY.

A. J. SHAW.

I.

While the transmission machinery of a manufacturing establishment of any kind is one of the most important sections of the entire plant, no part is usually more carelessly erected or receives less attention. Most of the special and regular machines are constructed in shops making a specialty of the particular class of which the machine is one, and is the result of much careful study and experiment, while the shafting, hangers, pulleys, and other details of the transmission machinery, are only too often the product of nothing but the haphazard methods of the average small shop.

As long as the line shaft does not absolutely refuse to turn around; as long as the bolts can be made to do their appointed work, even if under protest and by dint of constant coaxing and jockeying; as long as the gears are not entirely "out of mesh" and will somehow transmit motion from one to another, no matter with how much jar, jumping and clatter; the line shafting, belting or gearing is left to look out for itself. The "let-well-enough-alone" policy is the only one recognized, and "well-enough" means anything short of an absolute shut down.

The writer is familiar with a machine shop having a fair reputation for the quality of its work in certain specialties, in which the line shaft on one occasion broke in two, on account of being badly out of alignment. The hanger near which the break occurred was not less than eight or nine inches out of line with those on either side, and the shaft broke down on account of the constant bending backward and forward, to which it was subjected, being bent, straightened, and bent in the opposite direction 54,000 times per day. Whoever has broken a wire by bending it backward and forward, will realize the effect this would have on the metal of the shaft, continued day after day for weeks and possibly for months. This is an exaggerated and unusual case, but far too many line shafts are in a not much better condition.

It is not an unusual thing for one-third or one-half of the entire motive power of a shop or mill to be absorbed in keeping the transmission machinery in motion, while for a plant properly erected and maintained but small fraction of this should be necessary.

All running parts, such as shafting, pulleys, couplings and gearing, should be as light as possible consistent with ample strength and

rigidity. Lightness is desirable not only on account of the economy in first cost, which it involves, but on account of the constant saving which results, in oil, fuel and maintenance. Shafting should not be made so light, however, that it will run unsteadily at the end farthest from the driver. It may be amply strong to resist the tendency to twist off, but if the line is of great length, the driving end of the shaft may be a large fraction of, or even a whole, turn or more ahead of the other.

In one instance, the spinning room of a cotton mill was fitted up with a very long line of  $1\frac{3}{8}$  inch shafting. The shaft was amply strong as far as twisting off was concerned, but ran so unsteadily that it was impossible to make the machinery do good work. When a machine was thrown off at any part of the line, all the others would make a sudden jump ahead, causing the threads to break badly; and when it was thrown on again each machine in the line would receive a sudden check, thus causing more difficulty. The trouble was cured by the substitution of  $1\frac{1}{2}$  inch for the  $1\frac{3}{8}$  inch shaft.

If the saving of weight is considered of great importance, and the line is of considerable length, the diameter of the shaft may be reduced by making each length, or series of lengths, of a smaller size than the one preceding it. It is best, however, not to have too many sizes, as it interferes with the convenient changing of pulleys from one part of the line to another. On this account, unless the line is very long, it is better, in most cases, to make it of a uniform size throughout its entire length.

The diameter of shaft necessary for any given plant is influenced by the character of the machinery it is to drive, as well as by the power to be transmitted. If the work is very uniform and of such a character that slight, sudden, fluctuations in speed are not injurious, the shaft need not be very much larger than to transmit the required power with safety. If, on the other hand, heavy machinery is to be thrown into or out of action suddenly, or if the transmission is required to be smoothly regular and free from sudden shocks, then the size of the shaft must be considerably larger than necessary for strength alone. The increase necessary cannot be stated definitely in general terms, as it depends on the character of the work to be done, and must be decided by the judgment of the designer or millwright, or by deduction from similar cases.

In addition to the twisting or torsional stress due to the power transmitted, mill shaft-

ing is subjected to transverse or side stresses, due to the pull of belts, the weight of pulleys, and the "lift" of gearing.

A Horse-Power is simply a unit used for measuring work done. Pressure or load is not "work." A pressure of a million pounds per square inch may be sustained by a surface of any magnitude, for an indefinite period, but unless there is a movement of that surface, there is no work done, or energy expended upon it. A man may hold a heavy weight in his hand for an indefinite period, but unless he raises that weight, there is no expenditure of "power." If, however, the weight be raised though any distance, an amount of energy is expended which is proportional to the weight lifted and the distance through which it moves. This energy is stored up in the weight and will be given out by it when it falls or is allowed to descend.

*Work is the product of a pressure, load, or weight, into the distance through which it acts.*

The pressure or weight may be measured in pounds, tons, or any other unit of weight, and the distance through which it acts may be expressed in inches, feet, or any unit of length. The product representing the quantity of work done is expressed by a compound word made of the two terms denoting the quantities multiplied, the unit of length being placed first, as: foot-pounds, foot-tons; inch-pounds, &c., usually abbreviated to ft. lbs., ft. tons, in. lbs., &c.

Thus, to lift a weight of one pound through a height of one foot, requires an expenditure of energy equal to one foot-pound. To move a body one foot against a resistance of 33,000 pounds, requires an expenditure of energy equal to 33,000 ft. lbs. The expenditure of this amount of energy in one minute represents one horse-power.

A Horse-Power is a conventional unit, representing a quantity of work equivalent to raising 33,000 pounds one foot high in one minute, and while the unit is an inconvenient one on account of the inconvenience of the number 33 as a multiplier and divisor, it is retained by force of long-established usage.

The transmitting capacity of any shaft, of a given material is proportional to the cube of its diameter and the number of revolutions. Experience has shown that a wrought-iron shaft 1 inch in diameter will transmit with safety .028 or  $\frac{1}{35}$  of 1 H.P., at a speed of 1 revolution per minute; a shaft two inches in diameter  $2 \times 2 \times 2 = 8$  times as much or  $\frac{2}{7}$  of 1 H.P., and so on for any other size. From this is deduced the following rule for finding the transmitting capacity, for a twisting load, or torsional stress only, of any given shaft.



Multiply together the cube of the diameter of the shaft in inches and the number of revolutions per minute, and divide the product by 36; the quotient will be the transmitting capacity of the shaft in Horse Powers.

Expressed in algebraic form the equation would be:

$$H. P. = .028 d^3 N$$

in which  $d$  = the diam of the shaft in inches,  $N$  = the number of revolutions per minute, and .028 is the fraction  $\frac{1}{36}$  reduced to a decimal.

To transmit 1 H. P. at 1 revolution per minute, will require a shaft of 3.29 inches in diameter; from which by the application of the principles explained above may be deduced the following rule for determining the diameters of the shaft for twisting or torsional stress only, when the H. P. and revolutions per minute are given.

Divide the H. P. by the number of revolutions per minute; extract the cube root of the quotient, and multiply by 3.29; the product will be the diameter of the shaft in inches.

The algebraic expression would be

$$d = 3.29 \sqrt[3]{\frac{H. P.}{N}}$$

Example: What diameter of shaft will be required to transmit 350 H. P. at 160 revolutions per minute?

$250 \div 160 = 2.18$ , nearly: the cube root of 2.18 is 1.3, nearly, which multiplied by  $3.29 = 4.27$  inches, the diameter required for the twisting stress only.

If the shaft carries pulleys or gears it is usual to increase this diameter from 25 to 33 per cent., which would make the shaft from  $5\frac{1}{2}$  to  $5\frac{3}{4}$  inches.

The "Jack Shaft," or that which carries the main driving pulley or gear, should be made at least 50 per cent. larger than the diameter due to the power transmitted, on account of the side pull of the main driving belt, or the vibration and side pressure of the gears.

The calculation of the shaft diameters by the last rule may be considerably shortened by using the following table for

DIAMETERS OF WROUGHT IRON SHAFTING,  
FOR TORSIONAL STRESS ONLY,  
The H. P. and number of revolutions being given.

H. P. divided by revolutions per minute.	Diameter of Shaft in inches.	H. P. divided by revolutions per minute.	Diameter of Shaft in inches.
.012	0.753	3.75	5.12
.025	0.96	4.0	5.23
.050	1.213	4.25	5.34
.075	1.383	4.5	5.44
.1	1.529	4.75	5.54
.15	1.759	5.0	5.63
.2	1.93	5.5	5.82
.25	2.08	6.0	5.99
.3	2.21	6.5	6.15
.35	2.32	7.0	6.30
.4	2.43	7.5	6.45
.45	2.52	8.0	6.59
.5	2.61	9.	6.85
.6	2.78	10.	7.10
.7	2.93	11.	7.33
.8	3.06	12.	7.53
.9	3.18	13.	7.76
1.0	3.29	14.	7.94
1.25	3.55	15.	8.12
1.5	3.77	16.	8.30
1.75	3.96	17.	8.45
2.00	4.15	18.	8.63
2.25	4.32	19.	8.79
2.5	4.47	20.	8.93
2.75	4.61	22.	9.23
3.0	4.75	24.	9.51
3.25	4.88	26.	9.76
3.5	5.00	28.	10.00

(To be Continued.)

## NEWS.

HUTCHINSON & RUSSELL, millers at Canton, Me., have failed.

THE milling firm of Corl & Blake, Canton, Ohio, has dissolved; John F. Blake continues.

BURNED OUT.—Rowland Roberts' mill, at Horsham, Pa.; insurance \$3,500.

BURNED OUT.—Phillip Zilles' mill, at Mapleton, Wis. It is reported that J. H. Byerly has sold his mill at Lewisville, Oreg., for \$8,500.

DISSOLVED.—Wm. Lea's Sons & Co., New York, grain brokers, etc., have dissolved. Robeson Lea continues the business.

ASSIGNED.—Davis Sill, miller at Norway, Pa.

AT Sebringville, Ont., April 27, Röhreitsch's hotel, store house and stables, and Helson's grist mill were burned; loss \$9,000.

THE H. C. Cole Milling Co., of Chester, Ill., capital stock \$100,000, has incorporated. Z. T. Cole, Henry C. Cole, and C. B. Cole are the incorporators.

A 50 BBL. mill will shortly be built at Donaldsville, S. C., by J. E. Todd.

W. F. MATHEWS is to build a 150-barrel mill at Union City, Tenn.

R. W. THOMAS & Co. will build a flour mill at Thomasville, N. C.

J. A. GRONINGER, an experienced miller, is to build a mill at Horton, Kan.

JOHN MOORE, of Belair, Md., will remodel his mill to a full roller system.

IRVING & SCOTT, of Dresden, Tenn., will refit their mill to a full roller system.

THE Greenup Milling Co., of Greenup, Ky., will build a 50-bbl. flour mill.

THE Covington Flour Mill Co., Covington, Tenn., will build a grain elevator.

W. A. FALCONER, of Liberty, Va., will soon remodel to the roller system.

STETLER & SMITH, of Eaton Rapids, will build a 200-bbl. roller mill.

WM. F. KRUEGER, of Assaria, Ks., has moved to Lewistown, Pa., and has quit the milling business.

J. E. Glover has sold his interest in the mill at Boardman, Wis., to W. J. Virgin. The capacity will be increased to over 200 barrels per day.

BURNED—Charles Kraft's mill at Mendon, O.; loss \$11,000; no insurance.

BURNED—May 9, at La Porte, Ind., W. H. Hoppes' mill.

At Waldron, Ark., the flour mill, grist mill and cotton gin of Moses Pennington were burned recently loss \$3,000.

ASSIGNED—The Smith, Beggs & Rankin Machine Co. St. Louis, Mo., April 25.

THE Farmers' Alliance of Fort Worth, Tex., will erect a grain elevator of 1,000,000 bushels capacity.

S. W. GATSKILL & T. J. JUDY, of North Middletown, Ky., will build a 100-bbl. mill at Decatur, Ala.

THE Clifton Roller Mill Co., of Clifton Tex., recently incorporated, will build a \$12,000 roller mill.

THE Newport News & Mississippi Valley Railroad Co. will build a flour warehouse at Newport News, Va.

THE Crystal Flour Mill Co., of Weathersford, Tex., will increase capacity 150 to 300 bbls.

MESRS. Samuel Cund and C. Albright, of Parsons, Kan., will build a 65-bbl. roller flour mill at Leonard, Tex.

THE capacity of the Parker County roller flour mill at Weatherford, Tex., is to be increased. Present capacity 150 bbls.

THE El Dorado roller mill at El Dorado, Kan., was sold a few days ago at trustees sale. J. F. Thompson was the purchaser for \$11,000.

THE Cedar Hill Mill Co., Cedar Hill, Tenn., capital stock \$12,000, will erect an 80-bbl. roller mill. James Tyson is general manager.

A STOCK Company has been formed at St. Jo, Tex., and named St. Jo. Milling Co. A 100-bbl. flour mill is to be built immediately.

OGLIVIE'S Mills at Winnipeg, Man., are running again on full time. James Mahaffy, Port Albert, Ont., has remodeled to a 75-bbl. roller mill. Wm. Bradley,

Flesherton, Ont., has remodeled to a 50-bbl. roller mill. Leitch Bros., Oak Lake, Ont., will increase capacity to 250-bbl. roller process. P. McCabe's new mill at Port Hope, Ont., has started up. Jas. Wilson's new roller mill, at Radford, Que., is running satisfactorily.

THE following new mills are reported to be either in process of construction or about to be: By J. B. Smith, Glendale, Neb.; by the Farmers' Flour Mill Co., Waxahatchie, Tex.; by N. Vale, Carpenter, O.; R. W. Thomas & Co., Thomasville, N. C., a 75 bbl. roller mill; a corn-mill by S. M. Jennison & Sons, Talladega, Ala.; D. Hertzog, Graham, S. C.; A. Snyder, Germantown, Pa.; J. A. Wells, Wadesboro, Ky.; Comer & Trapp, Anniston, Ala.; E. W. Ing, Humboldt, Tenn.; The German Colony at Irondale, Ala.; J. Frye & Co., Carvinger, Tenn.; J. Lawrence, West Groton, Mass. Nearly all of the foregoing are roller mills.

AT Richmond, Va., the Gallego Flour Mills lately purchased by C. L. Todd, have been reorganized and are now in full blast; \$50,000 have been expended for new machinery and improvements. Among other improvements there are nine double sets of patent rollers. These with the twenty-three sets of stones will make a capacity of 1,500 barrels per day; the flour from the roller process is intended for the home trade, the stones being preferred for the Brazilian market. The Haxhall, Crenshaw Co., are running nearly their capacity; these mills grind mostly for the Brazilian trade. The Dunlop & McCance Company recently organized for grinding flour and meal.

WE condense the following items from the May number of the *Dominion Mechanical and Milling News* of Toronto, Canada:

The new Keewatin, Ont., roller mills are making 1,200 bbls. flour per day; Jas. Pettinger has purchased the mill at Fenelon Falls, Ont.; Duncombe & Shannon are to build an elevator at Waterford, Ont.; H. Vassal succeeds Vassal & Niquette, Grantham, Quebec; a stock company has been organized to build a mill at Birtle, Man.; Dodson & Campbell will change their mill to the roller process at Woodville, Ont.; Wm. F. Sinden has purchased the Lynn Valley mills near Simcoe, Ont.; Priner's mill, at Battleford, N. W. T., has contracted with the Dominion Government to do the grinding for the Indians for the next six years; W. & J. G. Greey's Belle River mill was recently completely destroyed by fire. This is the third mill burned on that site; the Dickson Co. will increase the capacity of the Otonabee mills at Ashburnham, Ont., from 150 to 200 bbls. roller mill.

THE Oatmeal Millers' Combine doesn't appear to be working satisfactorily. Only twenty out of a total of about sixty mill owners have joined the organization, while several prominent manufacturers have entered into open competition with it. It is the inability of the minority to regulate the action of the majority that necessitates so many meetings and prolonged discussions on the part of the combine. We should not be surprised to hear of its early dissolution.

AT Okawville, Ill., April 22d, the large four-story brick flouring mill with elevator attached and their contents, belonging to H. Schulz & Bro., was destroyed by fire. The origin of the fire is unknown. It was discovered in the south side of the building away from any machinery. The total cost of building and machinery amounted to about \$30,000. The loss is partially covered by \$13,500 insurance; a policy of \$10,000 had but recently expired, and had not been renewed.

### ARE THE TYPE WRITE PATENTS IN DANGER?

A patent is about to be filed in the United States Patent Office, says the *Engineer*, which bids fair to prove that there is nothing new under the sun. The certificate is dated 1829, and is signed by Andrew Jackson. The drawings and specifications cover the invention of a typewriter. It is styled a typographer, and the original patent record was destroyed in the patent office a dozen years ago. The drawings of the time-stained patent closely resemble the construction of the modern type-writers. The patent was originally taken out by Wm. C. Burt. His grandson lately discovered the drawings, and is now prepared to contest the validity of the Remington and Caligraph patents, which enjoy a practical monopoly.



## UNITED STATES MILLER.

E. HARRISON CAWKER, EDITOR.

PUBLISHED MONTHLY.

OFFICE, NO. 124 GRAND AVENUE, MILWAUKEE.

SUBSCRIPTION PRICE—PER YEAR, IN ADVANCE.

To American subscribers, postage prepaid..... \$1.00  
 To Canadian subscribers, postage prepaid..... 1.00  
 Foreign subscriptions..... 1.25

All Drafts and Post-Office Money Orders must be made payable to E. Harrison Cawker.

Bills for advertising will be sent monthly, unless otherwise agreed upon.

For estimates for advertising, address the UNITED STATES MILLER.

[Entered at the Post Office at Milwaukee, Wis., as mail matter of the second-class.]

MILWAUKEE &amp; CHICAGO, MAY, 1888.

*We respectfully request our readers when they write to persons or firms advertising in this paper, to mention that their advertisement was seen in the UNITED STATES MILLER. You will thereby oblige not only this paper, but the advertisers.*

GEO. P. WALLIHAN, late of the *Northwestern Miller* staff, but now engaged in railway publications with headquarters at Portland, Ore., made us a pleasant call May 22. We trust that he will like his new home and that the Oregonians will take kindly to him.

MESSRS. B. H. & J. Sanford, Sheboygan Falls, Wis., manufacturers of the Improved Walsh Double Turbine Waterwheel have just issued one of the neatest waterwheel books we have seen this year. The printing and engraving was done by the Riverside Printing Co., of Milwaukee, an establishment noted for excellent work.

THE publisher of the UNITED STATES MILLER is desirous of having the names and addresses of Head Millers, Millwrights and Head Engineers in all mills having a capacity of 150 bbls. per day or more.

THE *Northwestern Miller* will display its usual energy and "get up and get there" by issuing a *Daily Northwestern Miller* June 12, 13 and 14 at Buffalo, N. Y., during the great Millers Convention of 1888. The paper will contain a full report of the proceedings, local items of interest to visiting millers etc. and will be a great convenience. A limited amount of space will be given to advertising which will no doubt be promptly taken. We wish the *Northwestern Miller* all the success and praise its commendable efforts deserve.

RECENT official figures show the rapid growth and prosperity of Alabama and North Carolina. In 1870 the assessed value of property in Alabama was \$117,114,882; in 1879, \$123,757,072; and in 1887, \$214,925,869.

In the year 1870 the assessed valuation of real and personal property of North Carolina was 103,485,988; in 1880 it was \$169,916,907; in 1887 it was 210,035,453—showing an increase of over 100 per cent. since 1870.

THE U. S. Department of State has recently commenced to send out "special issues" for the use of the press, of consular reports on important subjects deserving immediate attention by the commercial public. The step is highly praiseworthy. Heretofore these reports when issued were too old in most instances to be valuable.

C. M. PALMER, publisher of the *Northwestern Miller*, has recently purchased a half interest in the *Minneapolis Daily Tribune* and will in future assume the active management of that paper. Mr. Palmer long since by his untiring energy and capability as a journalist placed the *Miller* in the foremost rank in its sphere and it is reasonable to presume that like success will attend him in the field of daily journalism. We heartily congratulate him and wish him all success and prosperity in his new acquisition.

## MILWAUKEE ITEMS.

AFTER considerable labor we are able to make the following reliable statement:

The total flour production of all the mills running in Milwaukee for the months of January, February, March and April, is 518,580 barrels. During this time the Centennial Mills and Cream City Mills, have been closed, and some other mills have been idle part of the time for the purpose of repairing or making alterations.

MR. EDWARD SANDERSON, of the Phoenix Mills, has been very ill during the past month, but we are pleased to learn that he is out of danger now, and is rapidly recovering.

MR. HOWELL, of Hodge, Howell & Co., Buffalo, N. Y., paid his respects to the U. S. MILLER recently. He was on his way to Minneapolis, after a few days' sojourn here, taking in our mills, and visiting his brother who lives here.

THE Gem Mills have repaired the damages from the break-down last month, and are running full time. They will, however, shut down for the season as soon as they grind out the wheat they have now on hand.

THE Jupiter Mills are running full time on export flour.

THE Phoenix Mills and Eagle Mills are running to full capacity on orders.

THE Duluth Mills are behind on orders and are running day and night to catch up.

THE Daisy Mills have made a big run so far this year, and are yet behind on orders.

C. MANEGOLD & SON are building a grain elevator and flour storage house adjoining their mill on West Water street, 40 x 150 feet and 5 stories in height. As the river runs in the rear of the mill and new elevator, they will have the best of facilities for receiving grain and shipping flour by water.

F. PRINZ & Co., 659 E. Water st., are meeting with a big demand for cockle separators. Some large machines have been ordered for Minneapolis and additional ones for Milwaukee mills.

CAPT. RICHARD DAVIS, proprietor of The Marine Boiler Works of Milwaukee, in a pleasant interview recently said to us: It is strange what little thought and care many use in the selection of a steam boiler. In some inscrutable manner they make up their minds that they want one "about" a certain size, with "about" a certain number of flues, etc., and then they hunt up the addresses of a few boiler makers and ask for figures and the chap that sends in the lowest bid takes the job. The consequence is that hundreds—yes thousands of boilers are in use to-day that the maker would not endorse with his

stamp as maker. It is a wonder to me that more explosions are not heard of. There are no doubt a great many boilers sent out annually by these dealers in cheap, ready made, "cut off by the yard boilers" that would not pass any reasonable inspection. They make good business for boiler patchers though. Capt. Davis is an old resident of Milwaukee, a thoroughly trained and educated practical man and has from a small beginning in early days built up a large business. He has been obliged several times to enlarge his works to accommodate increasing trade. His boilers can be found in the best steamers on all the lakes and in the best managed steamplants on shore. One of his customers said to us: "If any one gets one of Dick Davis' boilers he's got something he can swear by."

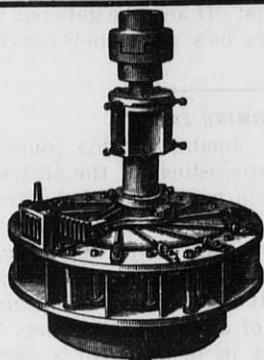
## THE COMING EVENT.

Before the June number of this journal goes to press the proceedings of the Millers' National Association at Buffalo, N. Y., will be a matter of history. All previous conventions of any very great importance have been called together by a mutual interest in patent infringement cases. Those things are no longer a source of anxiety to members of the Association but in lieu thereof a deep interest, pervading the ranks of millers in all sections of the country has developed in regard to the matter of disposing of flour and millstuffs after it has been manufactured and this question includes all the features of transportation, inspection, terminal charges, commissions, bills of lading, etc. As a preliminary, President Seybt called together a meeting of prominent exporting millers from different sections of the country at the Grand Pacific Hotel, Chicago, May 15, and matters were pretty well discussed. There was also present John Borrowman and John Kingsford representing the London Corn and Flour Exchange. The foreign gentlemen explained the manner of handling flour in London. President Seybt suggested that two bureaux one to look after the export and the other of the domestic trade be established, said bureaux to be under the direct control of the National Association Committee with a competent man at the head of each to attend to details. Committees were duly appointed and instructed to report to the Executive Committee of the Millers' National Association at the Genesee House, Buffalo, N. Y., June 11, at 10 A. M. The announcement was made that special rates to the convention at Buffalo from all points had been made and that a delegation of western agents of steamship companies would be in attendance at Buffalo. It was believed by many present that the exporter, importer and steamship lines would all make concessions on the bill of lading matter and that one satisfactory to all concerned would be agreed upon. If the measures now under consideration are carried out it will be without doubt the most practical and useful convention for the advancement of the milling interests of the United States ever held. Let every miller that possibly can be on hand and make the convention THE EVENT of the year.

THE Old Virginia Reel is well nigh out of date but reels of all kinds seem to be enjoying a real boom in flour mills, and really they deserve it.



THE  
STANDARD OF EXCELLENCE EVERYWHERE  
**EUREKA**  
GRAIN  
CLEANING MACHINERY.  
OVER  
24,000 IN USE.  
BUILT ONLY BY  
HOWES & EWELL SILVER CREEK N.Y.



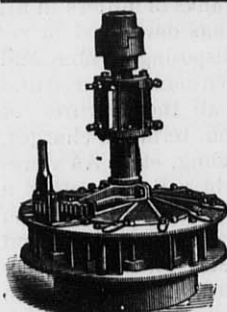
# JAMES LEFFEL'S IMPROVED Water Wheel

**Fine New Pamphlet for 1887.**

The "OLD RELIABLE" with Improvements, making it the Most Perfect Turbine now in use, comprising the Largest and the Smallest Wheels, under both the Highest and Lowest Heads in this country. Our new Pocket Wheel Book sent free. Address,

**JAMES LEFFEL & CO.,** Springfield, Ohio,  
and 110 Liberty St., New York City.

[Please mention this paper when you write to us.]



**POOLE & HUNT'S**  
**Leffel Turbine Water Wheel**

Made of best material and in best style of workmanship.

## Machine Molded Mill Gearing

From 1 to 20 feet diameter, of any desired face or pitch, molded by our own SPECIAL MACHINERY. Shafting, Pulleys, and Hangres, of the latest and most improved designs.

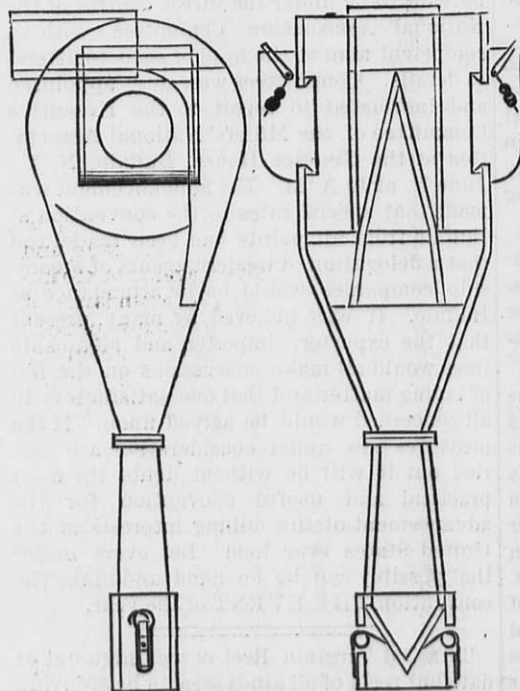
**Mixers and General Outfit for Fertilizer Works.**

**Shipping Facilities the Best in all Directions.**

**POOLE & HUNT, Baltimore, Md.**

**N. B.—Special attention given to Heavy Gearing for Pulp and Paper Mills.**

# The Eureka Dust Catcher



In offering this machine, I would call your attention to the arrangement for regulating the Catcher to suit the amount of air from fan (as shown by cuts), there being hardly two purifiers in a mill that discharge the same quantity of air, owing to the kind of middlings handled, some requiring light, while others require heavy suction, thus the same discharge opening will not answer for all machines. For this reason automatic machines fail in so many cases. In this machine the valve is set to balance the Fan, which point can be told instantly by a humming noise when the Fan is choked, and when once set is right at all times. Should the speed vary the valve opens and closes as the air varies. These machines are without any machinery whatever, requiring no extra power, no cloths to clog, or anything to get out of repair. As they start, so they will operate for years. Nor is this a so-called improvement on some other machine, but an entirely new machine, gotten out under our own patents and sold entirely on its merits. Warranted in every particular. These machines are intended for all kinds of work in a mill. It will be observed in the discharge of the dust that the spout is provided with a spring valve which can be set so as to allow the spout to fall to a certain point, when the material will counterbalance the valve and discharge the dust which can be spouted away to any suitable point, or the spout can be detached and an intermediate spout put to the machine and the valve spout attached at some more convenient place in the mill. The machine can be set at any convenient point. All that is required is that the spout shall enter on a level, or nearly so, with an abrupt angles in the spout, always being careful to close the discharge valve just to that point where the Fan does not labor, as the opening is made large so as to meet all cases, and if not closed the machine will blow out. These machines are built in three sizes for Purifiers and two sizes for Smuters.

Address for prices and discounts the Inventor and Sole Manufacturer,

C. N. SMITH.

DAYTON, O.

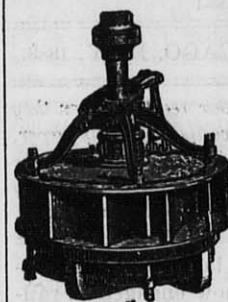
## LESS THAN ONE CENT A DAY

Secures 12 Complete NEW NOVELS, besides Essays, Short Stories, Sketches, Poems, etc. Each number is complete, and a volume in itself. One year's subscription makes a book of

book of  
**NEARLY TWO THOUSAND PAGES**

**Reviews**  
Of the best works of the best American authors. Among the Complete Novels which have already appeared are: "Brueton's Bayou," "Miss DeFarge," "Sinbre," "A Self-Made Man," "Kenyon's Wife," "Douglas Dunn," "The Deserter," "The Whistling Bug," "A Tale of a Town," "The Story of Little Fox Mountain Mines," "Apple Seed and Briar Thorn," "The Terra-Cotta Bust," "From the Banks," "Check and Counter-Check," etc. etc. The subscription price of this "King of the Monthlies" is but \$3.00 a year. Sample copy sent on request.  
**LEPPINCOTT'S MAGAZINE, PHILADELPHIA**

## Improved † Walsh † Double † Turbine



This wheel has a perfect fitting cylinder gate and draft tube combined, and allows no water to escape when closed.

## POWER GUARANTEED

equal to any wheel on the market using equal amount of water. Address for particulars.

**R. H. & J. SANFORD.**

Phoenix Iron Works,  
Sheboygan Falls, Wis.

# GANZ & CO.

**Budapest. Austria-Hungary.**

We are the first introducers of the Chilled Iron Rollers for milling purposes, and hold Letters Patent for the United States of America. For full particulars address as above.

[Mention this paper when you write to us.]

**If you want to know anything about**

## Southern California

Send for **THE GOLDEN ERA MAGAZINE**, filled with descriptions and illustrations. Send 10 cents for sample copy. \$3 00 per year. **THE GOLDEN ERA CO.**, San Diego, Cal.



**"TRIUMPH" CORN SHELLER**  
CAPACITY

**2000 BUSHEL PER DAY.**

Shells wet or dry corn.

**CHEAPEST AND BEST SHELLER.**

**PAIGE MANUF'G CO.**

No. 12 Fourth St., Painesville.

[Please mention this paper when you write to us.]



**BUFFALO CONVENTION NOTES.**

The Central Traffic Association and the Western States Passenger Association has communicated with Secretary Seamans, of The Millers' National Association, offering a rate from all points to millers attending the Buffalo Convention of 1½ fares for the round trip. *No stop-over privileges are granted in going to or returning from Buffalo.* The person buying a ticket for this occasion must get a certificate from the ticket agent who sells him the ticket. These must afterwards be stamped and certified by the Secretary of the Convention, and with this certificate a return ticket can be obtained for one-third fare. Millers should apply to the Secretary to stamp and certify their tickets as soon after arriving in Buffalo as possible, so as to avoid the grand rush usual at the close of conventions.

ALTHOUGH the programme is by no means yet complete, we are able to announce that papers will be read at the Convention, by S. T. K. Prime, Dwight, Ill., on "The Crop Situation of 1888," illustrated by diagrams and chart; by Jno. R. Reynolds, Jackson, Mich., on "The Necessities of Modern Milling"; by Hon. J. K. Arkell, Canajoharie, N. Y., on Bags and Bagging"; by A. A. Freeman of New York, "Present Abuses in Sales of Flour and Regulation of Prices and Productions; by A. W. Howard, of Minneapolis, on "Comparative Baking Tests, with Record and Reports on various Brands and Grades of Flour"; by E. W. Arndt, Depere, Wis., on "Mill Construction and Care of Milling Plant from an Insurance Standpoint"; by S. H. Seamans of Milwaukee, in connection with his report as Secretary and Treasurer of the Association, "An Historical Sketch of the Millers' National Association" from its inception to the present time.

The Headquarters of the Association and its officers during the Convention will be at the Genesee House.

The Buffalo committee on reception will look after the reception, entertainment and amusement of visiting millers. A banquet and steamboat excursion will be given.

We are now authorized to announce that The George T. Smith Middlings Purifier Co., of Jackson, Mich., will have in operation at the Convention a 50 barrel mill complete. This mill after the Buffalo Convention is over will be exhibited at the Centennial in Cincinnati and later in Paris, France, and Australia. It will unquestionably be the most remarkable mechanical display ever exhibited for the inspection of Millers.

All or nearly all the mill-building and furnishing firms will be represented. A great number of flour dealers will be present. Lake and Ocean steamship lines will be represented. Freight Departments of Railroads will be represented. Even the milling press will be represented.

**TO ADVERTISERS.**

I hereby certify that I have in my office, Milwaukee Post Office Receipts subject to inspection of advertisers, showing that I mailed during the months of March and April 2166 pounds of "Mail matter of the Second

Class." I recommend anyone who doubts that we issued editions of 10,000 copies each in March and April to weigh a copy and figure up for themselves. I shall in due time publish statements for May and June numbers, each of which I guarantee to be editions of 10,000 copies each.

E. HARRISON CAWKER,  
Publisher United States Miller.

N. B.—We respectfully suggest to advertisers in any paper to ask for reasonable proof of circulation. No honest publisher we think ought to hesitate to show up, when asked to by interested parties.

WITH this number we print the first of a series of technical articles by A. J. Shaw upon *Power Transmission* which will be of practical value to every machine user. Millers will gain much useful information from the careful perusal of these articles and should not only read them carefully but preserve them for reference.

MILWAUKEE has been seized with the western "boom" fever in earnest. The city certainly possesses rare advantages both as a manufacturing point and as a place of residence and, with the exercise of proper enterprise on the part of her citizens there is no reason why she should not be made to enjoy as healthy a "boom" as have Kansas City, Minneapolis, St. Paul and other western places. An association has been formed by the prominent citizens, whose mission it is to make known to the world at large the advantages of Milwaukee, and to interest outside capital in the city's progress. Booming western cities has been rather overdone and is somewhat of an old story, but in this, as in everything else, there is still "room at the top" and we hope to see The Cream City make rapid advancement in that direction.

As a result of the awakening in Milwaukee, the city has been attacked by a horde of "advertising fiends" with every conceivable scheme for the city's "benefit." These schemers have made many rich hauls by following similarly agitated cities throughout the country. No sooner is a place attacked by the fever than it is pounced upon by these quack doctors, who so thoroughly apply their leeches that the inflammation rapidly subsides and a reaction sets in. Merchants become skeptical regarding all advertising, they are so burdened with the expense of extra and unprofitable advertising, that they turn to the other extreme, and refuse to advertise at all. Thus the legitimate publications, who have all along been earnestly working for the good of the cause, are made to suffer for the ill deeds of some and weak judgment of others, and are compelled to struggle along without fair patronage, which they have earned and deserve. Advertisers feel that they have injudiciously spent more than they can afford in "snap schemes" and they get even on advertising in general by taking revenge out of the legitimate publications. This is an unhealthy state of affairs and all wrong. The press of Milwaukee have taken up arms against "snap advertising schemes" and we wish them success in their crusade.

Similar injustice is seen in other fields,—in that of mill-furnishing for instance. Occasionally some mill machinery firm, seized with a

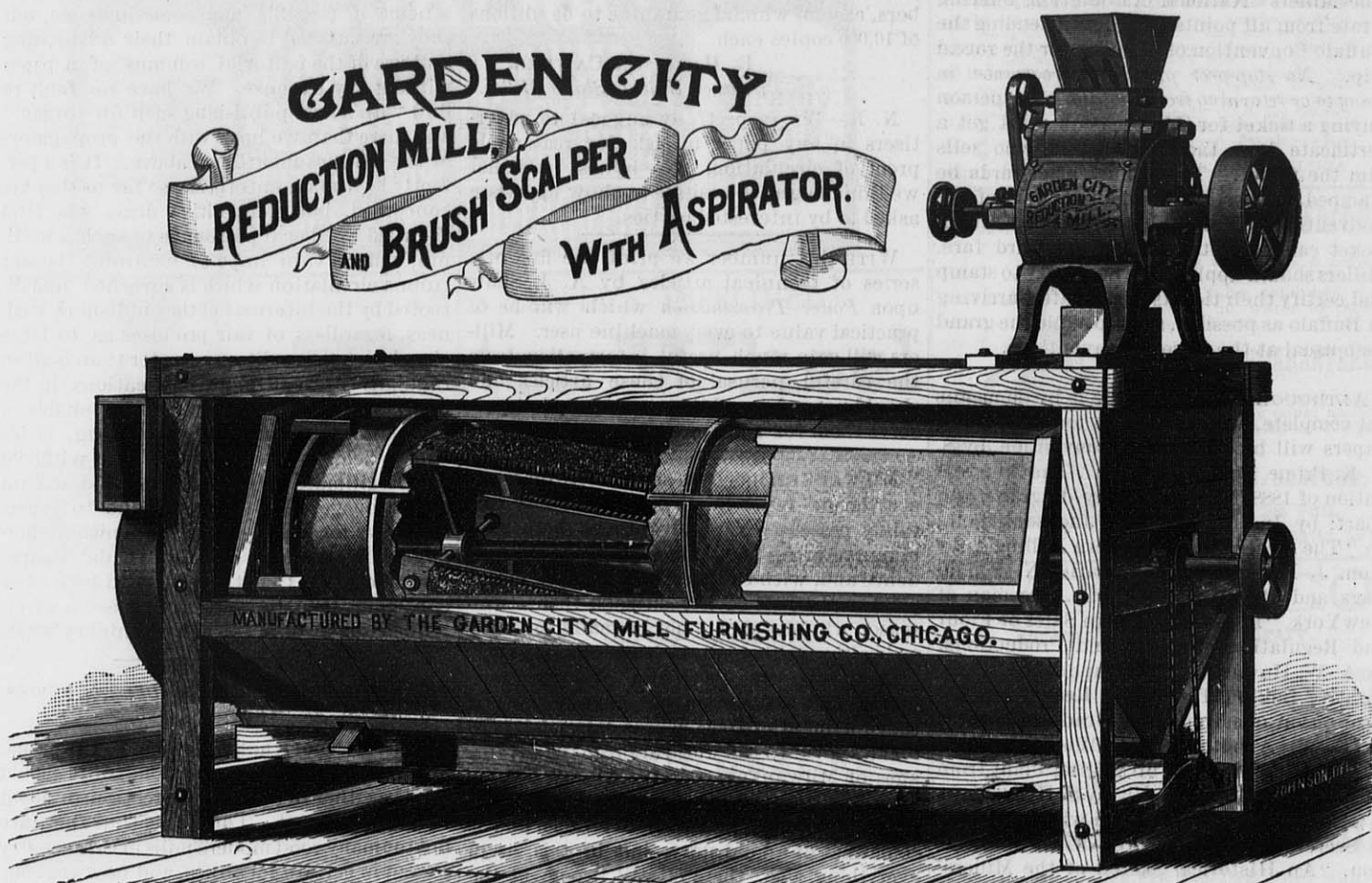
desire to have a medium, thoroughly subservient to their purposes, for disseminating information in regard to their particular ware, will decide to publish a "milling journal."

They would like to make money out of the scheme if possible and sometimes do, but they are satisfied to obtain their advertising and use of the editorial columns of a paper without any expense. We have no fault to find with a firm publishing such an "organ," any more than we have with the propagators of the schemes mentioned above. It is a perfectly legitimate enterprise, so far as they are concerned, but competitive firms who lend their aid by liberal patronage to such a medium, under a vain hope of obtaining benefit from a circulation which is governed and directed by the interests of the publishers' business, regardless of fair promises as to large circulation (in reality no greater than is given regularly by legitimate publications in the field), do wrong. They merely enable a competitor to obtain his advertising, in his chosen field, at their expense, and withhold from legitimate publications just that amount of patronage which is justly due to papers that have for years striven to furnish a thoroughly independent, clean and readable paper for millers, one that they will read instead of consigning it to the waste basket as an advertising circular or organ of a machinery house.

**THE OUTLOOK FOR MILLBUILDERS, FURNISHERS, Etc.**

It seems somewhat surprising to the casual observer that so many new flour mills should now be either in process of erection or about to be commenced. The fact is that there are not too many good modern mills in this country except in certain localities, and now that our unusually long winter and extremely cold, wet spring are apparently over, a number of new flouring mill enterprises will be carried out, many of them of considerable magnitude. A great amount of remodeling will also be done and it is true that there are thousands of mills in the United States to-day that are but slightly improved from their condition in 1870, and there are still living a great number of millers who can not or will not be convinced that any method is better than the plain old low-grinding system. *They used to make money out of it.* Perhaps this is the reason. Floods have recently been disastrous in their effects on milling property in many sections and this will give rise to a heavy demand for labor and material. Aside from this the destruction of machinery and supplies by ordinary wear and tear, and the introduction of newly perfected machines will make a good business for hundreds of firms and give employment to thousands of mechanics and unskilled laborers. Taken all in all we have no doubt but this will be a better year for the mill building and mill furnishing trade than 1887.

We notice of late that quite a number of rather good looking men, connected with the milling trade, have gracefully submitted to the solicitations of representatives of the milling newspapers and have allowed their "pictures to be tuk" and put in the papers. It is gratifying a harmless vanity for it can injure no one and it gives the photo-engraver a job, and then if the "pictures be pretty" they may please such ladies as may chance to see them, and stir up the ugly looking men to "slick up a bit," but — a picture of a man will never sell a smut machine.



*They are in operation in over One Thousand Roller Mills.*

*They are in operation in over Two Thousand Burr Mills.*

For Prices and Further Information, Address

**\* GARDEN CITY MILL FURNISHING CO., \***  
**CHICAGO, ILL.**



[From our own Correspondent.]

**OUR LONDON LETTER.**

LONDON, Eng., May 2, 1888.—The English millers have, as doubtless your readers are aware, had a more comfortable time during the past nine months, as regards the margin of profit. This has been due to the cheap supply of good Russian wheats which have enabled the English millers, with the help of English wheat, to produce a good flavor and strong flour at a lower price than the corresponding quality of American. But millers have been rather pressed during the past week to take a decided course of action. The weather had become wintry, and northeasterly winds retarded all harvest prospects. Besides the forecasts of the coming American crop, Californian, as well as Northwestern States, were seen taking the side of the sellers. Then, at home, farmers were busy in their fields and unwilling to sell at old prices, so that native samples had to be sought at more money.

In the north of England and Scotland there are still considerable breadths of barley to be put in, for the recent storms caught farmers when most actively engaged in pursuing that work, and rendered many lands once again unfit to be handled. On the whole, prospects are not cheering. The period of growth has arrived, and crops are still waiting, checked by cold days and colder nights. At present, however, it cannot be said that the wheat crop in this country has been endangered by the weather.

On Mark Lane Corn Exchange last Monday, I heard a prominent miller state that we had received since harvest equal to 4,000,000 qrs. of foreign flour, as against 6,000,000 qrs. of farmers' wheat. To this salute his dusty brother replied that if the English market did not soon mend he would seriously think of following the examples of several German brewers from the district of the Rhine, who have lately gone to Japan in order to supervise the production of German beer in that country. In such positions very high salaries are given, but instead of being a manager the writer said he would build a roller mill to compete with the American mills on the Pacific slope.

For some little time past the milling public have been troubled about a report that has gone round the trade that a new system of milling has been patented, and I have been asked several times since my return from Hungary, which visit, by the way, has been kept a secret, if I knew anything about this new system. The flutter produced in the trade was first started by *The Miller* in a few lines it published with a kind of mysterious tone, without the name or nature of the patent, which was reproduced in an American milling journal with the name of the patentee. A London financial paper made a note of the fact from the American milling paper, but not understanding the nature of the "berry" it had to "crack," dressed the "par" to the effect that roller mills would be done away with by the new method of milling. The patent about which so much fuss has been made is only after all "an improved method and apparatus for sifting, bolting, sorting or grading meal, middlings and other like pulverulent or granular material or produce," and which is, according to Mr. Carl Haggemacher, to revolutionize the

milling world. In my next letter I will give a few more details about this invention and the good work it was doing when I saw it at Pesth. Already several machines have been sold and are at work in Germany, Austria and Italy.

L. MAYGROVE.

[From our own Correspondent.]

**OUR BUFFALO LETTER.**

If Buffalo millers were never contented and happy, as far as prices and demand are concerned, they are so now. To use a very expressive but crude term, trade is "booming." The only drawback for the moment, but one not likely to seriously effect the milling interest at this point, is the great scarcity of No. 1 hard Duluth wheat. The supply of this grade was totally exhausted last Monday, and the first cargo which, by the way, is divided among no less than ten millers, is yet four days off. It is true there has been plenty of "Washburn" hard, but for some reason our millers could not get satisfactory results from this wheat. Last week the holders themselves becoming weary of the stuff, commenced to slaughter the remaining 15,000 bushels, cleaning it up to-day at 90¢@92¢, or about 5¢ less than was paid at the same time for No. 2 Northern from Duluth, and just what the wheat cost laid down here last fall. It is safe to say that no more spring with the graded name of "Washburn" will be sent to this market.

Prices of flour were advanced 25¢ per barrel on the 1st of May and again last Saturday, but so urgent is the demand that buyers do not mind the extra charge, and it is quite likely that another 25¢ will be added should the price of wheat show a still further upward tendency. Spring patents are selling to jobbers at \$5.50, best Minnesota spring bakers', \$5.00, and straight roller winter, \$5.00 per barrel. Millfeed is weak and steadily declining; spring and winter bran selling to-day at 18.00¢@18.50; middlings, 19.00¢@19.50.

Country millers have been compelled to shut down, owing to light deliveries from farmers' hands. This year it is not owing to seeding or the rush of farm work that wheat is not coming to market, but to the fact of their being no stocks held back.

Winter wheat scarce; No. 1 white sold to-day at \$1.03 and No. 2 red at 1.00. The general opinion is that spring wheat must sell lower, but winter will hold its own, owing to the short crop.

The New York State Millers' Association held its annual meeting in Rochester toward the closing of last month. The following Buffalo millers were present: A. R. James, Frederick Ogden, George Urban, Jr., H. F. Shuttleworth, John Smith and Horace Harvey. The session lasted nearly three hours, and was mainly taken up in the discussion of questions pertaining to the milling trade, the credit system coming in for the greater part of the time. The following resolution was unanimously adopted:

Resolved, That it is the opinion of this association that the inter-state commerce law should be so amended as to require all railways engaged in inter-state commerce to issue all bills of lading for exact amount of grain loaded in cars, and to deliver the same amount at destination.

At the conclusion of the session a vote of thanks was tendered to the retiring secretary

and treasurer, Mr. J. A. Hinds, of Rochester, who has held that position since the organization of the association. He was also presented with a beautiful basket of roses by the Buffalo delegation.

Mr. A. R. James, who was elected president, made one of his neat and characteristic Yankee speeches in thanking the members for the honor conferred upon him. He said: "I do not consider my election as an honor to myself, but to Buffalo, the coming milling centre of this country. I thank you gentlemen, one and all, for the dignity you have seen fit to confer upon the Queen City of the Lakes."

Of the rest of the time spent in Rochester little could be drawn from our millers (not even with wild horses or red hot pinchers), except that the Buffalo delegation were right royally entertained by their Flour City brethren, that they visited the art gallery in the Power block after the supper, and were dined and wine until left aboard of the train bound home.

The officers elected for this year were: President, A. R. James, Buffalo; vice-president, H. W. Davis, Rochester; secretary and treasurer, H. F. Shuttleworth, Buffalo. The next meeting will be held in Buffalo.

Messrs. Harvey & Henry, owners of the "Queen City," have received an apparently very anxious bid from New York to rent their mill for \$4,000 per year. Refused.

The three large spring wheat mills, mentioned last month, have not yet completed repairs.

Mr. George Urban, Jr., now that the Republican state convention is over, and Mr. A. R. James, will begin active preparations for the coming millers' convention.

**THE SCANDINAVIAN ELEVATOR SCHEME.**

[From our Buffalo Special Correspondent.]

Mr. Gautier de St. Croix and Mr. Charles C. Wolcott, agents of the Scandinavian Elevator Company, were in town a few weeks ago, ostensibly for the purpose of purchasing a site for a 2,000,000 bushel elevator. These gentlemen fell into the hands of the reporters, and from certain palpably ridiculous statements made in the published interviews, the trade here formed the opinion that the agents had learned little concerning their own business.

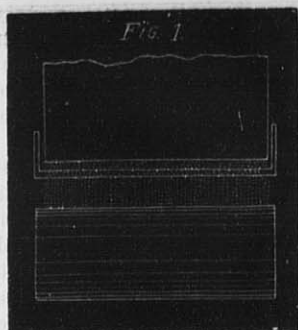
To purchasers and sellers of No. 1 hard in this market the interview as reported was very amusing. For instance, Mr. Gautier de St. Croix says: "Latterly, there has been a marked falling off in the quality of the grain graded as No. 1 hard Duluth, and while it was well known that this grain ought to be superior to any grain in the East or in Europe, and the fact remained that it was but little, if any, better than the yield of less-favored regions."

Anyone who has handled No. 1 hard since its introduction knows that the character of the wheat has not perceptibly changed; the proportion of soft and half soft is certainly large (the result of wearing out of soil), but Buffalo's No. 1 hard is the same as it has always been, viz.: not less than 75 per cent. of hard Scotch life and not less than 58 pounds to the measured bushel. The average amount of life in the No. 1 hard used by our millers is 85 per cent., and average weight 61 pounds.

(Continued on page 11.)



CAPACITY INCREASED 10 TO 20 PER CENT.—See Sidle, Fletcher, Holmes & Co.'s Letter  
 PATENTS INCREASED 4 PER CENT.—See Galaxy Mill Co.'s Letter.



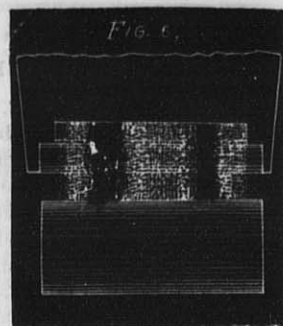
Uniform Sheet as fed by our  
 McAnulty Automatic Force Feeders

## HASELTINE · MILL · FURNISHING · CO.,

MINNEAPOLIS, MINN.,

MANUFACTURERS OF

## MCANULTY'S



Irregular Sheet as fed by the  
 Feed Roll with Automatic Gate.

# Automatic Force Feeders!

MCANULTY'S 1ST BREAK REGULATING FEEDERS AND DISTRIBUTORS.

**OUR GUARANTEE** Is to increase capacity of full Roller Mills 10 to 20 per cent. To save from 3 to 8 lbs. of wheat per barrel of flour manufactured. To increase patents 2 to 5 per cent. without requiring additional power.

### Fills Your Guarantee of 20 Per Cent. Increased Capacity

FROM SIDLE, FLETCHER, HOLMES & CO.,  
 Minneapolis.

Your Force Feeders fill your guarantee to increase the capacity 20 per cent. as your system enables us to treat our sixth Brake stock better with four double Allis mills than we formerly could with five double Allis mills.

Please arrange your system on our "Red Dog" Stock.

### TEN MORE.

### Fills a Guarantee to Increase Patents 4 Per Cent.

FROM GALAXY MILL CO.,  
 A. C. LORING, Manager.

They have enabled us to increase our patents 4 per cent. Our grades are improved, our clean-up and yields materially bettered. Please deliver us ten more.

MARISSA ROLLER MILLS,  
 Marissa, Ill., March 7th, 1888

Enclosed please find draft for \$100.00, to cover bill of January 28th, 1888. We have never put anything in the mill which has given as much satisfaction in operating as these Feeders, bought from your Mr. Clark. I hope you will have good success in future with them.

MEEK, FINGER & CO., Props.

Sedalia, Mo., February 27, 1888.

I am now using McAnulty's Automatic Force Feeders, and I can say that it is the finest feeder ever manufactured, and I have used a number of different automatic feeders. I am now taking out the Craig and putting in the above feeders. The McAnulty's have no superior, nor can they be any more perfect.

B. S. REMBAUGH.

Millersburg, O., Feb. 18, 1888.

We have your system of Feeders on our Rolls throughout our mill, and can safely say there is no

Feeder made to equal the McAnulty on any and all kinds of Stock, from first brake to the softest low grade. We also have one of your Feeders on our Corn and Feed Roll, which surprised us when we got it to work. It increased the capacity and gives us an even feed the whole length of the roll. We are more than pleased with them.

MAXWELL, HECKER & POMERINE.

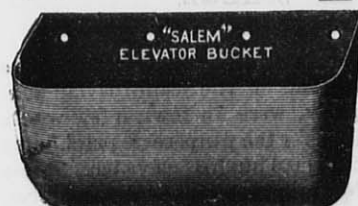
Office of THE TERRELL MILLING CO.,  
 Terrell, Texas, July 14th, 1887.

Hazeltine Mill Furnishing Co., Minneapolis, Minn.  
 Gentlemen:—The McAnulty Force Feeder shipped us has arrived all right, and we are well pleased with it. You can ship us the following order: Five (5) Feeders, to be used on 9x18 Double Stevens Roller Mills, speed 400, diameter of shafts 2½. One (1) Feeder same as above, with roll shaft 2½. Fit First Brake with your Weighing Regulator. Please ship at once, and greatly oblige,

TERRELL MILLING CO.

A. J. Childers, Pres.; T. M. Kell, Sec'y;  
 E. J. Lockhead, Supt.

## THE "SALEM"



is the original round cornered Elevator Bucket and its shape is broadly covered by a foundation patent.

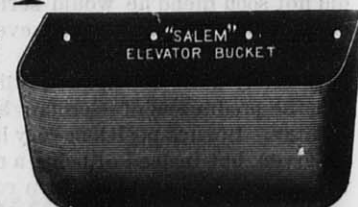
All buckets of the same shape, though produced by a different process, trespass upon our rights, and render dealers and users as well as manufacturers liable for damages.

### AVOID INFRINGEMENTS.

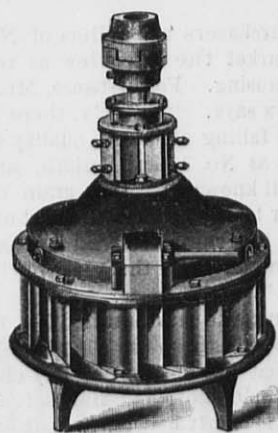
All legitimate "Salem" Buckets are plainly marked with the word SALEM.

**W. J. CLARK & CO., Sole Manufacturers, SALEM, OHIO.**

THORNBURGH & GLESSNER, Gen'l Agents, CHICAGO.



**BURNHAM'S**  
 Improved Standard Turbine



New Illustrated and Descriptive Catalogue  
 sent free.  
 Address YORK, PA.

Guaranteed Circulation for  
 May and June, 10,000 copies  
 each month.

## WANTED!

We want the addresses of

### HEAD MILLERS

in all mills having a capacity of 150 barrels of flour per day or more with short description of mill, system, power used, etc.

We want the addresses of

### MILLWRIGHTS

who take contracts for millbuilding, repairing, etc., and who would take orders for flour mill, elevator and malt house machinery and supplies.

We want the addresses of

### ENGINEERS

having charge of large engines in flour mills, elevators, breweries and malt houses.



CAWKER'S AMERICAN FLOUR MILL AND ELEVATOR DIRECTORY FOR 1888, issued March 3, is meeting with much praise from all departments of the trade. While not claimed by the publisher to be perfect, it answers FULLY the requirements of the trade. It is the only list published. The demand is limited and the price (Ten Dollars per copy) is cheap, considering the labor required in compiling, printing and selling. It contains lists of flour mill and grain elevator owners, miscellaneous kinds of mills such as corn, rye, oatmeal, rice and feed mills, millwrights, flour brokers and dealers in various sections of the United States and Canada, and a good list of European flour and grain importers. Kind of power used, rolls or stones, capacity and millers supposed to be worth \$10,000 or more are indicated in thousands of cases.





Minneapolis cannot compete with Buffalo in the quality of flour produced as the wheat received there is softer, coming as it does, from farms which have long ago lost their fertility to produce No. 1 hard. The wheat shipped to Buffalo from Duluth comes from virgin soil, which alone can produce the average amount of hard required to fill the standard. To show the value placed on Minneapolis wheat in this market, it is only necessary to go on 'change and attempt to sell the pick of the Minneapolis samples which were sent here to take the place of Buffalo No. 1 hard. This wheat grades No. 1 hard in Minneapolis, but barely passed as No. 1 Northern here, and not only this, Buffalo millers will not touch it at 8c under the price asked for No. 1 hard from Washburn.

Mr. Gautier de St. Croix must have heard of the rivalry existing between Minneapolis and Duluth, and also of an inspection so rigid at the latter place that there is a difference of 3 to 4c per bushel in favor of the shipper to the former market.

Mr. Gautier de St. Croix also says that one of the benefits to Buffalo will be "the improved quality of wheat which the millers of this vicinity will then obtain can not fail to give a general impetus to the milling industry in this region."

Neither Mr. Gautier de St. Croix nor his company can improve the quality of the No. 1 hard wheat ground by Buffalo millers or sold here, nor can he give the milling industry at this point or Rochester a general impetus, unless he first removes the discrimination under which our trade now suffers and which gives Minneapolis the same rate to the East as Buffalo.

The agent says: "About 18 months ago the Millers' Association of England and Scotland sent an agent out to America to ascertain why no more hard wheat came to England."

If this were true, what becomes of the millions of bushels of this grade annually shipped through Buffalo for export? Does it all go through the mixing process in New York? Its identity is certainly always preserved here. Admitting the mixing of wheat is done in Duluth it would be impossible with our admirable system of inspection, to pass anything here for other than it is under the standard adopted by a committee of the best judges of grain in the world.

According to Mr. Gautier de St. Croix "Buffalo will be benefited by the elevating and handling of from 20,000,000 to 30,000,000 more bushels of grain per annum than at present; there also will be the increased traffic by canal and railroad."

Where is this wheat to come from, if the wheat is taken from the elevator monopoly whose wheat must come here now, how can he get 20 to 30 millions more wheat?

The agent says: "The past few years hardly any of the best grade of wheat has come East. The result of this has been that the millers of the Atlantic slope and of Great Britain have been unable to produce the quality of flour which is demanded in the market, and have, in many instances, been driven into bankruptcy."

No, Mr. Gautier de St. Croix, was not the absence of certain grades of wheat which has brought disaster on the English miller, but it was free trade, together with low freight rates that did the business. Flour

laid down from Minneapolis in Liverpool at 27c per barrel will make milling unprofitable in any portion of the old country.

We have given enough to show the light in which the Scandinavian elevator scheme is regarded here.

[From our own Correspondent.]

#### OUR BALTIMORE LETTER.

The mantle of a bustier and more profitable epoch has apparently fallen on us, for since my last report the Baltimore markets have developed a degree of activity and strength rarely witnessed in these parts.

Flour, in sympathy with wheat, has been rapidly advancing, and at this writing fully maintains all the improvement assumed during the month.

The stock of flour at and below \$4.25, the grades most sought after, is exceedingly scarce at present, and renders an assortment desirable for jobbers extremely difficult.

Minnesota, St. Louis, and our own city mills, in addition to all others having business with Baltimore, as appended quotations will show, have marked up prices 25 to 30c per barrel.

This action has had the effect of augmenting the volume of trading wonderfully, and had the stock above referred to been accessible, the sales recorded would have reached much larger proportions. Rio shippers have been conspicuous for their non-appearance in the market. "Enhanced pretensions" frightened them off. They are now hoping for a change in the situation, which will shortly result favorably to their side, and enable them to purchase more advantageously than at current rates.

Neither does the European demand for flour prevail, commensurate with the "tidal wave," but that will doubtless follow later on, and at even higher figures than are now asked, for when our friends across the water are hungry, it has been their custom heretofore to obtain satisfaction at about the greatest cost. Cereals have been on the rampage now for quite a period.

The trading in corn, owing to the lack of supply, is too small to comment upon. In passing, will say that it is strong and higher with a continued upward tendency. August wheat, the option receiving the most attention here, has advanced between 7 and 8c per bushel from the lowest point of the year.

While the receipts of wheat and the stock in store are extremely limited, thereby restricting business in the near by months, speculation, on the other hand, in the new crop futures, has been simply enormous. Discouraging reports come from every source, relative to the winter wheat prospects, and this has been the principal factor in stimulating values.

The long spell of depression, prior to the recent improvement, converted many former bulls to the bear side, and when the present revolution set in, they were in a sad and deplorable predicament. It is to be hoped that they will not reverse their attitude on the market, now that the other extreme is about to be reached.

Choice milling wheat is in great demand, and bringing from \$1.00 to \$1.02 per bushel, readily.

The following millers' agents located here, and representing prominent mills throughout the country, report a large business on the

present advance: Charles H. Dorsey, J. Murray Wharton, P. H. Hill, Harry S. Belt, Bernap Mudge, Charles H. Gibbs and others.

The C. A. Gambrill Mfg. Co., of Baltimore, and the Brandywine Mills, of Wilmington, Del., are doing a rushing business here at full prices.

The Directors of the Baltimore Corn and Flour Exchange have adopted the following Rules, governing commission charges and rates for carrying and storing consignments, also interest on advances, to take effect June 1st, 1888:

#### ARTICLE XXV.

SEC. 1. The following rates of commission charges for receiving, selling and accounting for the various kinds of property herein named, being just and reasonable, are hereby established as the minimum charges which shall be made for the transaction of the business hereinafter specified, by members of this association:

For selling wheat, rye and oats, one (1) cent per bushel.

For selling corn in elevator, one-half (½) of one cent per bushel.

For selling corn otherwise than in elevator, one (1) cent per bushel.

For selling bran, shorts, chop and Mill feed, one dollar (\$1) per ton.

For selling hay and straw, (\$1) per ton.

In addition to the foregoing specified rates of commission, there shall be charged the legal rates of interest on all advances, whether made on bills of lading or otherwise; also established rates of storage and insurance upon all merchandise held in store or otherwise carried. No rebate, drawback, brokerage or allowance of any kind shall be made to consignors, directly or indirectly, or through any other party or parties. Nothing in this Article shall be so construed as to prevent any higher rates of commission from being charged.

SEC. 2. If a member, firm or incorporated company, accused of violating this Article, shall, when demanded, refuse to submit such records or memoranda in his, their or its books, correspondence, &c., as may have reference to the specific charge or charges of which such member, firm or incorporated company shall stand accused, to the Board of Directors of this association, or to a special committee thereof, for their examination or investigation, such refusal shall be accepted as *prima facie* evidence of the truth of the accusation.

When any member of this association shall be found guilty by its Board of Directors of violating any of the provisions or requirements of Sections 1 and 2 of this Article, he shall for the first offence be suspended from all the privileges of membership in the Baltimore Corn and Flour Exchange for not less than one year; and for the second offence he shall be expelled from the said Baltimore Corn and Flour Exchange.

Exports of Flour, Wheat and Corn from port of Baltimore from Jan. 1 to May 17, '88.

	Flour, Bbls.	Wheat, Bus.	Corn, Bus.
From Jan. 1, 1888.....	1,267,222	1,185,948	2,181,170
Same time 1887.....	1,316,735	3,819,563	5,564,297

Exports of Flour, Wheat and Corn from all United States ports during the month of April, 1888:

	Wheat, Bus.	Corn, Bus.	Flour, Bbls.
Total April, 1888.....	2,948,120	1,470,338	957,577
Total April, 1887.....	6,524,061	3,994,569	955,300

We quote the range of the market as follows:

Ohio, Indiana and Illinois Super.....	\$2.50@3.00
" " " Extra.....	3.25@4.00
" " " Family.....	4.25@4.75
Winter Wheat Patent.....	4.85@5.25
Minnesota ".....	4.85@5.10
Baltimore Winter Wheat Patent.....	5.75@—
" Choice Patent.....	5.50@—
" High Grade Family.....	5.40@—
" Choice Grade Extra.....	5.10@—
Maryland, Virginia and Penn'a Super.....	2.50@3.00
" " " Extra.....	3.25@4.00
" " " Family.....	4.25@4.75
City Mills Super.....	2.50@2.65
" Extra.....	3.25@3.75
" (Rio Brands Extra).....	4.95@5.10
Fine Flour.....	2.25@2.40
Rye Flour.....	3.60@3.90
Hominy.....	3.40@3.50
Hominy Grits.....	3.60@3.70
Corn meal, per 100 lbs.....	1.40@1.50

CHESPEAKE.

Baltimore, May 21, 1888.

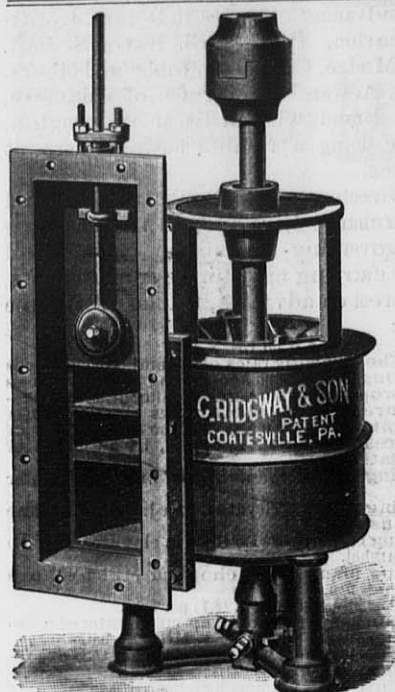
(From our own Correspondent.)

#### OUR ST. LOUIS LETTER.

The upward tendency of values specially noted in my last, having developed into a veritable "boom," finds present conditions more or less mixed and unsettled the contending influences, for the day are seemingly pretty nearly evenly balanced; the "short crop" cry continues to come from nearly

(Continued on page 13.)





# THE "PERFECTION" IS KING!

85 Per Cent. at { HALF GATE,  
THREE QUARTER GATE, } We Guarantee 80 Per Cent.  
FULL GATE,

## SAVES ALL COST OF PENSTOCK.

Tight Gate! Extreme Simplicity! No Clogging! Dozen Other Virtues!

### TOO GOOD TO BE TRUE, EH!

Well, you don't pay for it till it does all we say in your own mill before your own eyes.  
Remember that!

### BEATS ANY OVERSHOT EVER BUILT.

Because it gives same high percentage at part as at full gate, and is the only Water Wheel in the world that does so. Besides its Perfectly Tight Gate, Absolutely Tight.

## DON'T BUY AN ENGINE AND BOILER

high percentage when water is low.  
The "PERFECTION" often

To help out your failing water power in dry times until you properly improve the water power with this magnificent Water Wheel which gives you a

## SAVES THE NECESSITY OF STEAM POWER.

### INVESTIGATE THIS WHEEL.

It costs nothing to write us and get our Circulars and learn our terms of sale. We save you money and IMPROVE your power.

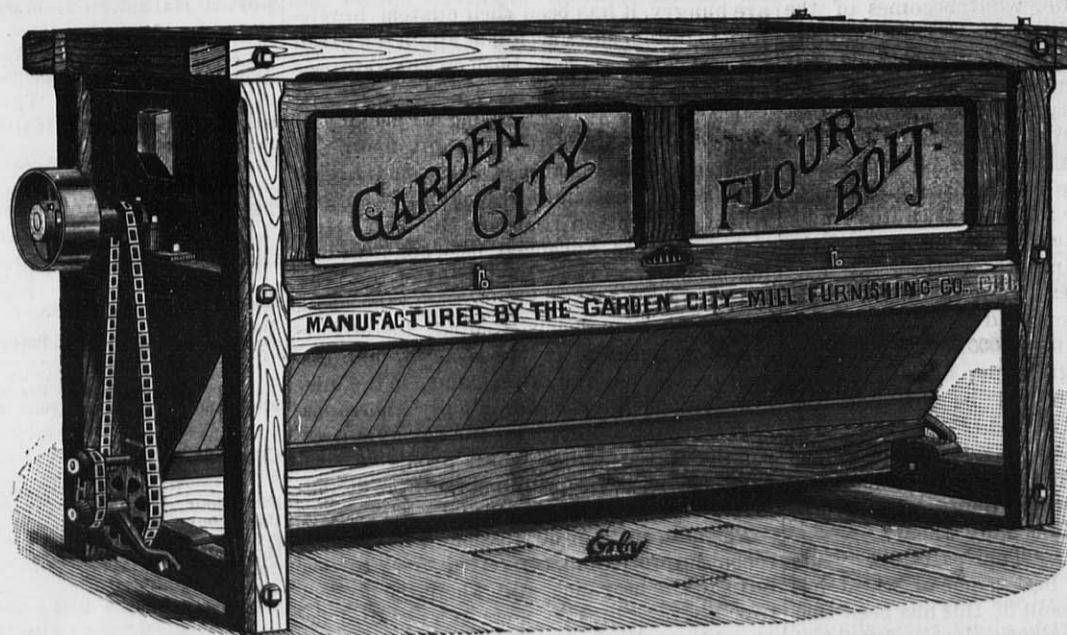
**IF WE DON'T, YOU DON'T PAY US, THAT'S ALL.**

Besides, Besides, Besides, Besides, we will also agree to set the "Perfection" beside or in place of your present wheel, and if we don't beat it (not EQUAL, mark you, but BEAT it) will give you the Perfection for nothing. Isn't that fair?

## CRAIG RIDGWAY & SON, COATESVILLE, PA.

16 GREEN STREET,

## GARDEN CITY FLOUR DRESSER.



SUPERIOR TO MOST.

THE EQUAL OF ANY FLOUR DRESSER MADE.

Sole Agent for the Celebrated Bodmer Bolting Cloth.

For Prices, Address

## GARDEN CITY MILL FURNISHING CO., CHICAGO, ILL.



all quarters, but many traders have become distrustful of it, and while it is generally believed that we have entered upon a higher plane of values, it may become necessary to supplement "crop news" with real, or threatened political disturbances before the fancy figures predicted by some can be realized. Meanwhile all are hopeful that the increased activity already felt will continue, and that the entire product of the country will be wanted at values that will insure prosperity in every direction. The "agreement entered into by millers' and flour dealers establishing terms as to sales of flour," so far as I can learn through interviews, has worked and is working satisfactorily, and parties to the agreement are sanguine of the best results in the future.

The agreement referred to is as follows:

Whereas, Owing to the very small margin of profit which has existed for some time, and the vexations arising from a variety of terms and practices which have lately prevailed in the flour trade, it has become necessary for the protection of both buyers and sellers that a uniform system be established;

THEREFORE, the millers and flour dealers whose signatures are hereto attached, agree with one another to adopt, and adhere to, the following terms and conditions of sales, to take effect April 24, 1888:

1. To pack no flour in sacks of less than 24 lbs. weight.

2. To pack 98 lb., 48 lb. and 24 lb. sacks only, as fractional parts of a barrel, as established by the law of the state of Missouri.

3. All sales must be made for cash, or on time not exceeding thirty days. Cash sales to be settled for by sight draft on shipment of goods. Sales made at thirty days to be closed by a thirty day draft on shipment of goods, which buyers are required to honor, regardless of arrival of goods. Sales made to points which have no banking facilities may be excepted, as far as closing by draft is concerned; but in no case shall longer time than thirty days be given on such sales. No discount shall be allowed for anticipating payment of a time sale.

4. All sales of mill feed shall be on sight draft, bill of lading attached.

5. That whether sales are made "F. O. B." or "cost and freight," the seller will only be responsible for rate of freight specified in bill of lading, and any excess paid by buyer will be at his own risk of recovery from the transportation company; nor will seller be responsible for damage or shortage incurred by the transportation company; but will, on being furnished with required proofs of overcharge or damage, do all in his power to procure speedy settlement for buyer's benefit.

6. In all sales made "cost and freight," route of transportation line to be at seller's option, unless previously specified otherwise.

7. No greater difference than 10 cents per barrel shall be allowed on flour packed in sacks. Half barrels to be 12½ cents each, extra.

The Regina mills started up Monday, after a suspension of operation for a few days to introduce new and valuable machinery, they are running half time, not because of any limit to the demand for their product, but because of their belief that the stock of milling wheat will be exhausted entirely in this market before anything can be drawn from the new crop. The Geo. P. Plant Milling Company is running full time, and has turned out more than 200,000 barrels since their damages were repaired. The Sessinghaus Milling Co., Saxony Mill Co. and Victoria Flour Mill Co. are running full time. The E. O. Stanard Milling Co. is running their New Eagle Mills full capacity, and doing excellent work; their Alton Mill is running half time. The Kauffman Milling Co. is running half time here; their "President" Mill, at Bethalto, being shut down. It is not likely they will start the "President" until after harvest, and the outlook for wheat in that

section of Illinois is so unpromising, they may not be justified in starting up even then. The Merrimac Mills, (H. B. Eggers & Co.) are running half time. Kehlor Bros. are operating three of their mills; one of them full time, two of them half time. The E. Goddard & Sons' Flour Mill Co. shut down this week. The "St. George Mill Co." is also shut down. The "Camp Spring Mill Co." is repairing the mill by putting in the "short system," and will increase the capacity to 1000 barrels per day. The "Hezel Milling Co.," East St. Louis, and the "Crown Milling Co.," Belleville, (J. F. Imbs & Co.) are running full time. The "Wood Maud Milling Co.," and the Southern Mill Co., (corn mills) are running full time, and seem to have no difficulty in placing all their product. The "mill machinery" firms, represented by Tom Miller and "Downton," as well as the "Todds & Stanley company," report a steady trade.

The well-known bag house of H. & L. Chase, whose connections extend from Boston to San Francisco, report a good trade in their line during the past month, the demand including both domestic and export orders.

The Stock of wheat of all grades in store here is 486,583 bushels, and of flour about 50,000 barrels.

Mr. Nicholas Eisenmeyer, late of Little Rock, Arkansas, has sold his mill at that place, and goes to Washington Territory for the purpose of engaging in milling there.

Respectfully, S.  
ST. LOUIS, Mo., May 20, 1888.

#### ABOUT WHEAT CLEANING, Etc.

LANCASTER Co., PA., May 16, '88.

Editor United States Miller, Milwaukee, Wis.

Dear Sir:—In the last number of your valuable paper I found an article written by L. Gathmann in regard to wheat cleaning. I have no doubt if we cleaned our grain as well as he advises us to do, clear white flour can be made under all systems, either rolls or burrs, long or short system. I think myself there is more "humbug" in milling than there is any necessity for and I don't doubt it at all if all millers had understood as much about milling eight or ten years ago as they do at present, that there would not be a single long system mill in the country. The ignorance of millers and the ignorance of the mill furnishers (or business policy) created the gradual reduction of long system mills.

I am running my little burr mill in competition against a full roller mill; I have all the custom work I can tend to; I am using an old 24" Munson mill, new stock, and very close, and I have them just as smooth as I can make them and use very little face. I use this mill for my main reduction, or in fact I make but one reduction on wheat, unless you count the Garden City First Break and Scalper as one reduction.

The coarse middlings I grind on a 6x12 smooth roll. The fine middlings I grind on a 16" Munson. I have no doubt that you western people will say, "what an old fogey;" but let me tell you that I make just as much money in proportion as my neighbors, the full roller mill. I don't believe in making \$100 out of the mill and spending a \$110 for improvements, and my flour is just as white as the roller mill can make it, by mixing their whole products together. I am convinced that the whole thing is hinged on the wheat

cleaning more than anything else, and further that you can make good clear flour by almost any system if you have good clean wheat to begin with.

Respectfully Yours,

M. L.

#### THE CHICAGO, MILWAUKEE & ST. PAUL R. R.

As disseminators of practical information the railway companies of the United States do quite as much in the way of educating the adult portion of our population as in done by the public schools in "teaching the young idea how to shoot."

In addition to the matter of fact time schedules, dealing only with figures showing the arrival and departures of trains at all stations, some of the Railway Companies call attention to particular facilities offered, by publishing guide books, pamphlets, circulars, calenders, almanacs, etc., which, while serving to advertise the various roads, also convey to the intelligent mind considerable information of a character calculated to instruct the reader thereof. The sending of a two-cent postage stamp to A. V. H. Carpenter, General Passenger Agent CHICAGO, MILWAUKEE & ST. PAUL RAILWAY, Milwaukee, Wis., will suffice to bring by return mail any one of the following named publications which may be designated by the applicant: Ben. Franklin Almanac for 1888. A Tale of Eleven Cities. Guide to Summer Homes. The West, Northwest and Southwest. Plain Facts about Dakota. The World's Granary—Descriptive Atlas. Whist, and How to Play it. A Treatise on Hunting and Fishing. The Reason Why, etc. All of these publications are finely illustrated, and contain valuable information which can be obtained in no other way.

#### PUBLICATIONS RECEIVED.

EDITOR CHARLES B. MURRAY, of the Cincinnati Price Current, has just issued as a supplement to that excellent journal, his 29th annual report of Pork Packing in the West and elsewhere in the United States, accompanied with provision and grain trade statistics for the year ending March 1, 1888. This volume contains much valuable statistical matter. The price is 25 cents. Every business man interested in these lines should send for a copy.

THE WOMAN'S MAGAZINE, published at Brattleboro, Vt., has come to hand. It is a handsome, finely illustrated periodical, and will certainly please the ladies, young and old.

THE WIDE AWAKE for May is an excellent number, with the usual variety of prose and verse by the best writers. The frontispiece is a finely executed picture of Queen Louise of Prussia and her two sons. A paper on Chinese Dragons gives some curious illustrations from an old Chinese MS. The paper on the family of James Madison, reproduces a number of very interesting historical portraits. D. Lothrop Co., Boston.

IN THE AMERICAN MAGAZINE for May, William E. Roy Curtis will begin a series of illustrated articles on "The Oldest of American Cities." The first paper will deal largely with Carthage which was the first city founded on the continent, although several colonies had been founded on the near-by islands and a fortress had been built at Panama. The city became the rendezvous of the Spanish galleons that went to South America for treasure, and consequently a most tempting field for pirates. Incidents in relation to these, together with descriptions of the large churches, palaces and other buildings, afford great scope for an article of this character, and Mr. Curtis has taken full advantage of the opportunity.

THE COSMOPOLITAN for May opens with an illustrated article, "The Pedigree of the Devil," by M. D. Conway. Four of the illustrations are in colors. Other note-worthy articles are, "What our Grandfathers laughed at;" "Children in Persia;" "A Congress of Famous Women;" "The Bacon Farce a Tragedy;" "Hoang Ho, the Curse of China;" etc. The frontispiece is a fine plate in color representing Mephistopheles and Margaret, as acted by Mr. Irving and Miss Terry.



## THE INDIANA MILLER'S ASSOCIATION.

Pursuant to call, the millers of Indiana, that is a good number of them, met in the State House, Indianapolis, May 5, to effect a thorough organization. The meeting was called to order by the President, Mr. T. B. Boyer. Sec'y Ranck, read the report of Secretary and Treasurer. The President then appointed Committees on Resolutions, District Organizations, Officers for the coming year and Insurance. The convention then adjourned until May 9, at 10 A. M.

The first business was the report of the committees. Committee on organizing a millers mutual insurance company, reported favorably. An invitation from The Nordyke & Marmon Co., to visiting Millers, to take a railroad trip around the city on the Belt Line and to visit the company's works, was read and accepted.

A pleasant communication from Mr. C. M. Palmer, publisher of *The North Western Miller* was read. A committee was appointed to invite Governor Gray, the present Governor of Indiana, to address the convention. In response the Governor soon came in and addressed the convention as follows:

"Gentlemen of the Indiana Miller's Association: I am here in response to an invitation extended me a few moments ago by your committee to appear before you. I sincerely thank you for the compliment paid me, and the honor paid me, and assure you that I am glad to see so many representatives of that important industrial interest of the state of Indiana. Indiana, as you are aware, being one of the foremost states in the production of corn and wheat and cereals, the next industrial interest to that, and one that is closely allied to that, would be the milling interests of the state. Of course, I am not advised of the purpose and object of your Association, but I take it for granted that your organization is for the purpose of furthering that great interest—the milling interest—of Indiana, and I have no doubt that you will in the end succeed in placing the milling interest in Indiana alongside, if not in advance, of that of any other state. We have a great state in the production of nearly everything that goes to the sustenance of man. I might say that man derives his sustenance from the earth, and you are engaged in the business that prepares it for the sustenance of man. Therefore, as the chief executive of Indiana, and as a citizen of the state, I could not otherwise than feel a deep interest in the objects of your Association. I hope that you may not only have a pleasant but very interesting meeting, and I hope that the results of that meeting may be to still further the interests of the business in which you are engaged.

Hoping that your meeting may be successful, I thank you again and bid you good-day, as I have several gentlemen waiting on me on business of the state. (Applause.)

President C. H. Seybt, President of the Miller's National Association, was called upon and responded as follows:

Mr. Chairman—I am not a speaker. Especially after the Governor of the state has spoken to you to take up a common Illinois miller is rather uncommon—rather too much of a change. However, I will talk to you on practical questions, and the question I am requested to speak upon is Local Organization.

The thought occurred to me in looking at you that your very appearance to-day is an object lesson. Formerly, when millers met you saw a long row of dusty collars. When we saw them on the streets you could tell them five squares off by the looks of their coat collars, their white hats and white suits. I recollect when, as a young man, I started into the milling business, the first thing I did was to go to a tailor and order a \$35 suit, and then I found out I was a miller. You look to-day as though you might pass for a Methodist Conference. [Laughter.] I don't mean your faces look that way, but your clothes look that way. [Laughter.]

And what is the lesson? The lesson to me is this: Formerly we laid great stress on the mechanical part of our business. You come here dressed in your broadcloth suits. You see the point I wish to make? Unbeknown to yourselves you give the situation away by appearing this way. It shows that the stage of the business is different from what it was when a miller had to stay in the mill all day, crawl under different pieces of machinery and dust here and there, and do this and that. That stage of the business has passed. Machinery does that for you now. You put on your business suit and sit in the office, consult your leisure, get your correspondence in order, and your main study now is how to sell your flour.

The milling business has ceased to be the art it used to be; it has become a mechanical business with the members, and the art is now how to get rid of the flour. Am I right there? As I said before, your dress proves it to me.

Locally, you can do a great deal to protect yourselves. You can do nothing, or very little, toward shaping the general markets. That is beyond your control. But certainly you can do a great deal toward ameliorating your local condition. I think millers do a great wrong to themselves and to the trade at large in not joining together for that purpose.

Some fifteen years ago I had a competitor in my town with whom I used live in the usual style of two millers in one town. We would not look at each other when we passed on the streets. He would look one way and I would look the other way. We called each other all sorts of names; we belonged to different political parties; we were just diametrically opposed to one another. We finally sued each other, and we fought and fought until there was not much left of either of us. To-day, gentlemen, those very parties and I work closely together and have been doing so for years. When one wants to make a sale to Europe or any other point, the telephone will ring and one will ask the other, "Say, I have got such and such an offer; do you think I had better take it or wait for a better price?" We have the same wheat and we have the same market, but we get along the very best kind. We used to tread on each other's toes continually, but for the last six years we have made our prices together. Just last week we formed a joint stock company and appointed a manager to buy wheat for us in certain territory, and one day they get a car-load and the next day we get a car-load. And so it goes right along without any friction or misunderstanding of any kind. That just simply shows what organization will do.

I met that same miller the other day—by the way, he is an uncle of mine—and I said to him, "How much money would you want to bring back the old state of affairs?" "Well," he said, "it would take a good many thousand dollars a year before I would be willing to abrogate the pleasant arrangement we now have." I know that we have paid at least \$1,000 less at each mill each year than we would have done under other circumstances.

We farm out the territory and we don't jump into our neighbors' pasture. No; we respect our fences; we don't do it. It is not considered respectable. Otherwise, the moment you overstep your limits the others will do the same.

You passed a resolution here this morning about mutual insurance. Some twelve years ago some of my neighbors got together and talked about mutual insurance. Well, after talking it over a little while I took my buggy and went to different neighbors and talked mutual insurance with them. And we finally got twenty millers together to guarantee that if one burned out the others would pay \$5,000 to him. And this small, modest, local beginning, is to-day the Millers' National Insurance Company, which has almost \$10,000,000 in risks and has a surplus of \$200,000; and it has given to millers, insurance at just one-half of the cost charged by regular insurance companies.

What has been done in Illinois can be done here. Last week I was called to Springfield, Illinois, where the West-Central Illinois Millers' Association started a local organization.

There were 28 firms that immediately signed the articles of agreement, paid in their initiation fees, and since then over 15 have joined the association. They have another meeting at the end of this month to elect officers. They are people just like you are here; their trade is just the same, and their competition is just the same, and if they can do it why can't you do it? The state of Indiana for some unaccountable reason has always been slow in association matters. I have been connected with the National Association for the last fifteen years and have made several efforts to get up local associations here, but it never amounted to much.

A couple of weeks ago I was at the North Missouri Millers' Association. They have now 86 members. They started a little over a year ago. They make their wheat prices and their flour prices. They have a committee on grievances to whom every infraction of the rules is to be reported—with whom all complaints must be lodged if any of the members over-step the limits and violate the rules. When that committee was called upon to report, the chairman of that committee got up and said: "Mr. Chairman: I have the pleasure to say that there has not been a single complaint lodged with the grievance committee during the last three months." Don't that speak well, where you have mills covering a strip of country from Kansas City to St. Joseph, and from there to Keokuk and Quincy? Not a single complaint, that means that every member of the association lived up to the rules.

I have heard it talked up again and again that the other fellow won't live up to the rules. And who is this other fellow? You, yourselves, are the other fellows.

Some gentleman yesterday got up and said we want to hear from Mr. Seybt; he knows all about it, he can get us together. I do not know whether it is in the Bible or in Shakespeare, but there is an old proverb which says "The Lord helps those that help themselves." You, yourselves ought to be the ones to take that in hand. Others will assist you; others who have had experience will assist you in getting at it. But when a fellow gets religion the first requisite is, he must have a contrite heart, and when you join a millers' association it is for you to know that your neighbor is just as honest as you are yourself.

It is peculiar in the milling business that every fellow, no matter what small rat-trap he runs, knows he makes the best flour on the road; and he cannot understand how the fellow on the other side of the road has not gone to pieces long ago. I heard that a thousand times and pretty nearly every man has the story to tell. Now, gentlemen, I am well acquainted with the millers. I am getting along somewhat in years and I have had opportunities to watch, and I tell you the other fellow across the road does business as well as you do, is just as good as you are, knows just as much about the business as you do, and whenever you come to that conclusion then you are ready for an association and not before.

You can trust the other fellow just as well as he can trust you. If you agree to hold up the wheat prices, or hold them down, whichever way you want to, and agree to hold up the flour price—that you will not pay more than so much for the best wheat and that you will not sell flour in any market for less than so and so, you will find that the other fellow will do it also. Make up your minds to be honest about it, and stick to it, and you will find that the other fellow is just as honest as you yourself are.

Now, how to get at it. I would advise that you select different localities in the state; each man can tell exactly how far his own territory extends. Use lines drawn from east to west or from north to south: or in a certain territory bounded perhaps by a river or railway on one side or on the other. Those who have the same sources of supplies and the same markets should come together. You can fix up matters so that they are fitted to the northern part of the state and to the southern part of the state. Divide the state into districts with defined boundary lines, and keep them for yourself. Get only such millers together as have about the same



sources of supplies, and who have about the same markets. Then you bring them on a level. Then every move you make hits a point of vital interest to yourself and everyone with you, and every time you make a point it possibly will, and virtually covers the whole situation. We have tried it in other states and find that it works the best in that way. You must have a man in each district to take hold of it, and he must make up his mind that he will not rest until his district is in shape. And you will find when you first go to work in earnest that it is much easier than you imagine.

I am sorry I did not bring along with me a copy of the constitution and by-laws of the North Missouri Millers' Association to show you how they manage it. But I will send your secretary for distribution among you copies of their constitution and by-laws.

I am of the opinion, however, that the less you put upon your paper the better it is. You firmly resolve to do right. That is all that is required; and that fully carried out will work a great deal better than a long list of rules and by-laws and penalties for every violation. I know by experience it is very hard to collect such a penalty. You could not collect such a penalty by law. Your own conscience must be the regulator of these matters.

You will find if you have organized in that way it will work all right. But don't knock the whole business over because some brother has been wavering a little. Go to him and say to him, here you didn't do quite right there; let us try and fix it up again; let us try and be right again. Show a little Christian spirit in that way. The man who has done wrong, if he is talked to properly, will feel ashamed of it and not do it again. You try that and you will find it works very pleasantly indeed.

Then when these districts are organized in that way you will find it of very great advantage. Have one district follow another like links in a chain, and you will find they will all pull together. Of course, your state organization must in the end be the head of these local organizations. If any of the districts get to quarreling between themselves, not the individuals, but the districts, then the state organization must step in and take up the matter; and above that must be the national organization to take up any disputes that may arise between the state organizations.

Before I close I want to make this point. You must have one man in each district to take the matter up and push it; not only for his private interests but for the good of the cause. There are always men who like to be leaders. Such men must take hold of it in each district and then it will be successful undoubtedly. If you have a very hard case to manage, and I can be of any use to you, I will be glad to do so. (Applause.)

Mr. D. A. Richardson introduced a resolution regarding milling intransit, and a committee was appointed to Indiana to get Indiana roads to allow such privileges to Indiana millers as was given by trunk lines.

Very interesting papers were read as follows: "Small Millers and the Export Trade," by C. H. Seybt; "Uniform System of Grading," by Nicholas Elles; "Mill Book-keeping," by C. W. McDaniel; "Cash vs. credit in Sale of Flour," by L. H. Blanton; "Mill Mutual Insurance," by L. H. Gibson; "Steam Power for Flour Mills," by A. Hoppin; "The Exchange system from the Farmers' Stand Point," by W. W. Sullivan.

(Lack of space prevents us from publishing these papers in this number), EDITOR.

The following resolution was next adopted. Resolved, That this association make application for membership in the Millers' National Association.

The chair announced that the next thing in order was the report of the committee on the selection of officers for the ensuing year. The committee recommended that the follow-

ing named persons serve for the ensuing year, viz.: President—S. B. Boyer. Vice President—L. A. Niblack. Secretary and Treasurer—D. H. Ranck. Directors—Nic. Elles, J. E. Loughry, E. G. Thomas, M. S. Blish, Wm. Trow, J. H. Wellington, F. E. C. Hawks, Wm. Styer, L. H. Blanton.

The report was concurred in by the association.

Mr. Ranck moved that Mr. Nic. Elles be appointed a member of the executive committee of the Millers' National Association. Adopted.

Mr. Seybt—Mr. Chairman, the matter of transportation to Buffalo to the Millers' National Association will receive our attention at Chicago next week.

The President—We now have thirty-three members, and we want an even hundred. Let every member here try and get others to join. If we can get a membership of one hundred we would be in a good condition to do something.

#### NOTES.

The excursion given by the Nordyke & Marmon Co. was an interesting event. When the special train arrived at the works, the visitors went through the entire establishment. A novel feature was the driving of a set of rolls by electricity. The works were in full operation, and visitors who had never been there before were surprised at their magnitude. This company has the facilities for turning out an immense amount of work, and we trust that its business will demand the continual turning of every wheel.

THE UNITED STATES MILLER, the North-western Miller and the American Miller were all represented, and Bro. Ranck, of the Millstone, of Indianapolis, was everywhere, and proved himself not only ornamental, but useful in giving information and entertaining visitors.

The Machinery firms were represented as follows: The Richmond Mfg. Co., by W. Trudgeon; Geo. T. Smith Middlings Purifier Co., by Mr. Caldwell; A. B. Bowman, by Mr. Slate; H. J. Deal, by himself; Haseltine Mill Furnishing Co., by Mr. Garman; Aug. Heine, by Mr. Vaughn; Stephen Hughes & Co., by R. Hughes; E. P. Allis & Co., by A. Hoppin.

R. Hunter Craig, flour importer of Bristol, England was present, and J. J. Blackman, flour dealer of New York was represented.

The convention was a success. The only thing lacking was a larger attendance.

#### SPECIAL NOTICE.

B. F. Ryer, 179 Park Ave., Chicago, Ill., has been appointed by J. H. Ernst & Co., of New York City, Sole Agent for Chicago of the well-known

#### Bodmer Bolting Cloth.

Orders for Cloths and making up promptly attended to. Address as above.

## 50 Charming Complete Novels FOR ONE DOLLAR!

By special arrangement with a leading New York Publishing House we are enabled to make the following extraordinary offer:

Upon receipt of only **One Dollar** we will send, by mail, post-paid, to any address, **Fifty Valuable Books**, each containing a complete first-class novel by a well-known and popular author, as follows:

**A Bartered Life.** By MARION HAKLAND.  
**An Old Man's Sacrifice.** By Mrs. ANN S. STEPHENS.  
**A Wicked Girl.** By MARY CECIL HAY.  
**A Low Marriage.** By Miss MULOCK. Illustrated.  
**Under the Lilacs.** By the author of "Dora Thorne."  
**The Strange Case of Dr. Jekyll and Mr. Hyde.** By R. L. STEVENSON.  
**The Lawyer's Secret.** By Miss M. E. BRADDON.  
**Fair but False.** By the author of "Dora Thorne."  
**The Ring of Hearts.** By B. L. FARJEON.  
**Dora's Fortune.** By FLORENCE WARDEN.  
**A Playwright's Daughter.** By Mrs. ANNIE EDWARDS. Illustrated.  
**Forging the Fetters.** By Mrs. ALEXANDER.  
**The Poison of Asps.** By FLORENCE MARRYAT.  
**Mont Grange.** By Mrs. HENRY WOOD.  
**Agatha's History.** By MARGARET BLOUNT.  
**Out of the Sea.** By CLARA AUGUSTA.  
**The Story of a Storm.** By Mrs. JANE G. AUSTIN.  
**The Evil Genius.** By M. T. CALDER.  
**The Mystery at Blackwood Grange.** By MAY AGNES FLEMING.  
**The Lust of the Ruthvens.** By Miss MULOCK. Illustrated.  
**The Morwick Farm Mystery.** By WILKIE COLLINS. Illustrated.  
**Out of the Depths.** By HUGH CONWAY.  
**Retribution.** By MARGARET BLOUNT.  
**A Tale of Sin.** By Mrs. HENRY WOOD.  
**A Portent Hunter.** By ANNIE THOMAS. Illustrated.  
**In Capid's Net.** By the author of "Dora Thorne."

**Wedded and Parted.** By the author of "Dora Thorne."  
**The Knightsbridge Mystery.** By CHARLES READ.  
**Ingledeu House.** By the author of "Dora Thorne."  
**A Passive Crime.** By "THE DUCHESS."  
**Rose Lodge.** By Mrs. HENRY WOOD.  
**A Bridge of Love.** By the author of "Dora Thorne."  
**The Fatal Marriage.** By Miss M. E. BRADDON.  
**A Queen Amongst Women.** By the author of "Dora Thorne."  
**The Blatchford Bequest.** By HUGH CONWAY. Illustrated.  
**The Curse of Carew.** By the author of "Dora Thorne."  
**A Shadow on the Threshold.** By MARY CECIL HAY.  
**The Fatal Lilies.** By the author of "Dora Thorne."  
**Carrington's Gift.** By HUGH CONWAY. Illustrated.  
**More Bitter than Death.** By the author of "Dora Thorne."  
**Missor Mrs.?** By WILKIE COLLINS. Illustrated.  
**In the Holidays.** By MARY CECIL HAY.  
**The Romantic Adventures of a Milkmaid.** By THOMAS HARDY.  
**A Dead Heart.** By the author of "Dora Thorne."  
**Dark Days.** By HUGH CONWAY.  
**Shadow on the Snow.** By B. L. FARJEON.  
**At the World's Mercy.** By FLORENCE WARDEN.  
**Called Back.** By HUGH CONWAY.  
**Wedded Treason.** By "THE DUCHESS."  
**The Grey Woman.** By Mrs. GASKELL. Illustrated.

As heretofore stated, the **Fifty complete novels** enumerated above will all be sent, by mail, post-paid, to any address, upon receipt of only **one dollar**. This is at the rate of only two cents each. Who ever heard of such a wonderful bargain in literature? Remember that each is a **first-class novel by a first-class author**—they are not short stories—and each one is complete; you get it entire from beginning to end. Each one is published in the form of a neat pamphlet book—handy and attractive to read—and each one is a deeply interesting novel. In the *Seaside* and other "Libraries" these novels cost twenty cents each; hence you will observe that for one dollar we sell the same amount of reading matter for which other publishers charge ten dollars. Can any person, man or woman who is a lover of good literature, afford to miss such an opportunity as this?

For \$1.75 we will send all of the above Novels, post paid, to any address in North America and the UNITED STATES MILLER for one year. Address

**E. HARRISON CAWKER,**

Publisher of the "United States Miller," Milwaukee, Wis.



## AN AUTHENTIC BUYERS' GUIDE.

MILL AND ELEVATOR BUILDERS,  
MILL FURNISHERS, MANUFACTURERS OF AND DEALERS IN  
MILL AND ELEVATOR MACHINERY AND SUPPLIES.

Cards will be inserted under this heading in the "U. S. Miller," not exceeding three lines, copy of paper included, for FIVE DOLLARS per year, cash with order. Additional lines, \$1.00 each, per year.

- Edw. P. Allis & Co., Milwaukee, Wis., builders of complete Flour Mills, manufacturers of Flour Mill Machinery, and dealers in Supplies of every description. [Mr. 89.]
- Garden City Mill Furnishing Co., Chicago, Ill., Mill Builders, manufacturers full line of Flour Mill Machinery, dealers in Mill Supplies, Bolting Cloth etc., etc. [Mr. 89.]
- Jonathan Mills Mfg. Co., Cleveland, O., manufacturers of Milling Machinery, dealers in Mill Supplies, Bolting Cloth, etc. [Mr. 89.]
- Borden, Selleck & Co., 48 & 50 Lake st., Chicago, Ill., manufacturers of "HARRISON CONVEYOR" for Grain, Malt, etc., etc. [Mr. 89.]
- Haseltine Mill Furnishing Co., Minneapolis, Minn., manufacturers of "MCANULTY FEEDERS" for Rolls, etc., etc. [Mr. 89.]
- John C. Higgins & Son, 165 West Kinzie Street, Chicago, Ill., mfrs. of and dressers of Mill Picks. [Mr. 89.]
- H. P. Yale & Co., Milwaukee, Wis., Manufacturers' Agents of Engines and Boilers, New York Leather Belting Co.'s Leather Belting, Dodge Wood Pulley.
- Poole & Hunt, Baltimore, Md., manufacturers of Steam Engines, Water Wheels, Flour, Corn, Paper, Saw and Cotton Mill Machinery.
- W. J. Clark & Co., Salem, O., manufacturers of "SALEM" Elevator Buckets, etc.
- Thornburgh & Glessner, 18-22 N. Clinton St., Chicago, Ill., manufacturers of Mill and Elevator Supplies.
- R. C. McCulley, (P. O. Box 214) Lancaster, Pa., manufactures Cob Crushers, Cooper's Stoves, Castings, Patterns, etc. [Mr. 89.]
- B. H. & J. Sanford, Phoenix Iron Works, Sheboygan, Falls, Wis., manufacturers of the "IMPROVED WALSH DOUBLE TURBINE WATER WHEEL." [Mr. 89.]
- John C. Kilner, York Foundry and Engine Works, York, Neb., Mill and Elevator machinery of all kinds, Engines, Boilers, Pulleys, Shafting, etc. [Mr. 89.]
- The Gutta Percha and Rubber Mfg. Co., 159-161 Lake st., Chicago, Ill., Belting and Rubber Goods. [Mr. 89.]
- The Avery Elevator Bucket Co., sole owners and manufacturers of Seamless Steel Elevator Buckets, Wason, Lake and Dart sts., Cleveland, O. [Mr. 89.]
- Richmond Mfg. Co., Lockport, N. Y., manufacturers of Grain Cleaning Machinery, Bran Dusters etc. [89. Mr.]
- N. Y. Belting and Packing Co., N. Y. Leather Belting Co., Goulds & Austin, Agents, 167 and 169 Lake Street, Chicago. [Apr. 89.]
- Weller Bros., 94 Wendell st., Chicago. Mfrs Mill and Elevator specialties, Cups, Boots, Spouts, Steel Conveyors, Power Grain Shovels; dealers in Cotton and Rubber Belting. [Apr. 89.]
- The Nordyke & Marmon Co., Indianapolis, Ind., Flour Mill and Mill Machinery builders, and dealers in Mill Supplies of all kinds. [May 89.]
- The Case Manufacturing Co., Columbus, O., Millbuilders and manufacturers of a full line of Flour Mill Machinery, Mill Supplies, etc. [May 89.]
- The Shields & Brown Co., 240 and 242 Randolph st., Chicago, and 143 Worth st., New York. Mfrs. of Sectional Insulated Air Coverings for steam, gas, and water pipe, etc. [May 89.]
- W. G. Avery Mfg Co., 10 Vincent st., Cleveland, O., Specialties: Avery Lever Belt Punches, Avery Seamless Elevator Buckets, Belting, Elevator Bolts, &c. [May 89.]

## SECOND HAND MACHINERY WANTED.

Any parties having second hand engines, boilers, pumps, etc., are requested to send lists and prices f. o. b. to the undersigned. Any parties having mills for sale, rent or exchange, are requested to correspond with me. Any one desirous of purchasing second hand mill machinery or a mill, farming land or other property, will find bargains by correspondence with me. Address

A. J. MAYNOR, Woodland, Ill.

EXPORT AND MERCHANT MILLERS  
AND MANUFACTURERS OF  
WHEAT, RYE AND BUCKWHEAT  
FLOURS, AND CORN MEAL AND  
CORN PRODUCTS, (WITH NAMES  
OF SPECIAL "BRANDS" MADE) DESIRING CORRESPONDENCE WITH  
SOLID HOUSES WITH A VIEW TO  
TRADE.

Cards will be inserted under this head in the UNITED STATES MILLER, not exceeding three lines, paper included, for FIVE DOLLARS per year. Additional lines, \$1.00 each per year.

- J. B. A. Kern & Son, "Eagle Mills," Milwaukee, Wis. WHEAT FLOUR BRANDS—Patents: "Success," "Kern's," Bakers: "Triumph," "High Ground," "Eagle." RYE FLOUR BRANDS—"A Rye," "1 Rye," "Rye." Hard wheat flour and roller process rye flour SPECIALTIES. [Apr. 89.]
- E. Sanderson & Co., "Phoenix Mills, Milwaukee, Wis., U. S. A. Manufacturers and Exporters of choice spring wheat flours. Daily capacity 1500 barrels. [Apr. 89.]
- Bernhard Stern, "Jupiter Mills," Milwaukee, Wis. Roller Mill. Hard wheat Patents. Principal brand, "Jupiter." [Apr. 89.]
- Faist, Kraus & Co., "Duluth Roller Mill," Milwaukee, Wis., Manufacturers and Exporters of choice spring wheat flours. Daily capacity 1500 barrels. [May 89.]
- Russell, Andrews & Birkett Penn Yan, N. Y. Manufacturers of roller process Rye and Buckwheat flour. Absolute purity guaranteed. Write for prices. [Apr. 89.]

Prominent Flour, Grain and Provision Brokers,  
desiring correspondence with Millers  
of Wheat, Rye and Buckwheat Flours, and  
Cornmeal and Corn Products, with a view  
to Trade.

Cards will be inserted under this heading in the "U. S. Miller," not exceeding three lines, copy of paper included, for FIVE DOLLARS per year. Additional lines, \$1.00 each per year.

- S. P. Thompson & Co., 218 Patterson st., Baltimore, Md. Flour and Grain Commission.
- Magor Bros. & Co., Produce Exchange, New York, Shipping and Commission, Flour, Grain and Provisions.
- W. K. Sherwood, Flour and Grain Commission, 18 South Commercial Street, St. Louis, Mo. [Ap. 89.]
- L. R. Hurd, Minneapolis, Minn., Flour, Grain and Commission. [May 89.]

## NEW CATALOGUES, &amp;c., RECEIVED.

THE Sidle Fletcher Holmes Cook Book is the title of a neat 50-page pamphlet issued by the well-known millers The Sidle Fletcher Holmes Co., of Minneapolis, Minn. It is furnished free to their customers and others desiring it. It deserves a place in the kitchen of all who like well-cooked food. Send for a copy.

THE Robert Aitchison Perforated Metal Co., 76 Van Buren street, Chicago, Ill., have issued a 70-page catalogue giving full information and illustrations of all perforated metals. Write for a copy.

THE Todd & Stanley Mill Furnishing Co., 917 N. Second street, have just issued their Price List, No. 54, for 1888. Mill and elevator owners will find it handy to refer to when they want to buy machinery or supplies. Sent free on application. Get it.

THE Avery Elevator Bucket Co., Cleveland, O., are out with a new catalogue which is an item of interest to the Trade.

BURNHAM BROS., York, Pa., have just issued the 1888 Turbine Water-wheel book, which will interest users of water-power.

THE Flenniken Turbine Co., Dubuque, Ia., have just got out a new Water-wheel book which will be of service to those contemplating buying new wheels. Sent free to all asking for it.

C. C. PHILLIPS, 20 S. Broad st., Philadelphia, Pa., has issued a grinding mill catalogue which feed millers will find of especial value. These mills are for grinding most anything.

THORNBURGH & GLESSNER, Nos. 18-21 N. Clinton st., Chicago, Ill., sent us several exquisite catalogues of the different departments of their business. As dealers in mill and elevator supplies they are known everywhere.

THE Gutta Percha and Rubber Mfg. Co., 159-161 Lake st., Chicago, Ill., dealers in belting, hose etc., are out with a new book, which should be kept in every well regulated mill and elevator office for reference when goods are wanted. Sent free.

JOHN C. KILNER, York, Neb., is bound to have his share of trade in the West, and consequently has issued a neat catalogue and price list, which is worth having. Send for it and consult his prices.

THE Sandwich Mfg. Co., Sandwich Ill., never does anything by halves, as will be admitted by all who send for a copy of their "stunning" Catalogue of corn shellers, feed grinders, horse-powers, etc. etc.

THE Knickerbocker Co., Jackson, Mich., has just issued a pamphlet concerning the Cyclone Dust Collector, which shows what it is, who uses it, and what they think about it. Sent free to all.



CAN A STEAM BOILER or pipe become hot enough to ignite a match purely from heat, without the least possible friction? At what heat would it ignite, and what would be the highest number of degrees of steam heat that could be brought to bear upon the outside of a steam-boiler under pressure? Also, could steam-pipes set fire to anything else? A phosphorus match will ignite at 140 degrees Fahrenheit; steam at the boiling point is 212 degrees; under high pressure of 240 pounds to the inch, steam can be heated to 403 degrees—but this is not hot enough to set fire to wood as dry pine wood ignites at 800 degrees, and charcoal at 580.—*St. Paul Pioneer Press*

Nevertheless "de sun do move;" we have seen it! A pine board laid on pipes through which super-heated steam was passed from the boiler to an oil retort charred black in a few hours. The woodwork on which heating pipes were hung 300 feet from the boiler became so charred that the screws let go and the pipes fell down. We can cite actual occurrences by the dozen.—*Insurance Monitor, N. Y.*



## NO OTHER RAILWAY IN THE NORTHWEST

has in so short a period gained the reputation and popularity enjoyed by the **WISCONSIN CENTRAL LINE**. From a comparatively unknown factor in the commercial world, it has been transformed to an independent, influential, grand **Through Route**, with magnificent depots, superb equipment and unsurpassed terminal facilities. Through careful catering to details, it has won for itself a reputation for solidity, safety, convenience and attention to its patrons, second to no railroad in the country. **Pullman** sleepers, models of palatial comfort, dining cars in which the cuisine and general appointments are up to the highest standard, and coaches especially built for this route, are among the chief elements which have contributed towards catering successfully to a discriminating public. Located directly on its line, between **Chicago and Milwaukee**, and **St. Paul and Minneapolis**, and **Chicago and Ashland and Duluth**, are the following thriving cities of Wisconsin and Michigan: **Burlington, Waukesha, Fond du Lac, Oshkosh, Neenah, Menasha, Stevens Point, Chippewa Falls, Eau Claire, New Richmond, Hurley, Wis., Ironwood, Mich., and Bessemer, Mich.**

For details, information, lowest current rates, berths, etc., via this route, to any point in the **Northwest**, apply to nearest Ticket Agent, or address

**WM. S. MELLEN, JAMES BARKER,**  
General Manager. Gen'l. Pass. & Ticket Agt.  
MILWAUKEE.

## A NIGHT IN CHICAGO —AND A— NIGHT TRAIN —TO— INDIANAPOLIS. —THE—

**MONON ROUTE**  
LOUISVILLE, NEW ALBANY & CHICAGO RY.  
HAS A TRAIN

Leaving \* Chicago  
AT 11:40 P. M.

EVERY NIGHT (Sundays included), with THROUGH COACHES and PULLMAN SLEEPERS, ARRIVING INDIANAPOLIS at 7:30 A. M.

ADDITIONAL TRAINS leave Chicago for Indianapolis at 8:15 A. M. and 8:20 P. M.

Ask your home Agent to make your tickets read via the **MONON ROUTE**, so your comfort may be assured. For further information, Sleeping Car Berths, etc., call at

CITY TICKET OFFICE, No. 73 CLARK ST.

—OR AT THE—

DEARBORN STATION, CHICAGO.

E. O. McCORMICK, Gen'l. Pass. Agent, CHICAGO.



Owens and operates nearly 5,650 miles of thoroughly equipped road in Illinois, Wisconsin, Iowa, Missouri, Minnesota and Dakota.

It is the Best Direct Route between all principal points in the Northwest, Southwest and Far West.

For maps, time tables, rates of passage and freight, etc., apply to the nearest station agent of the CHICAGO, MILWAUKEE & ST. PAUL RAILWAY, or to any Railroad Agent anywhere in the World.

**R. MILLER,** General Manager.  
**A. V. H. CARPENTER,** Gen'l. Pass. and Tkt. Agt.  
**J. F. TUCKER,** Ass't Gen'l. Manager.  
**GEO. H. HEAFFORD,** Ass't Gen'l. Pass. and Tkt. Agt.  
MILWAUKEE, WISCONSIN.

For information in reference to Lands and Towns owned by the CHICAGO, MILWAUKEE & ST. PAUL RAILWAY COMPANY, write to H. G. HAUGAN, Land Commissioner, Milwaukee, Wisconsin.

## THE CHICAGO AND NORTH-WESTERN RAILWAY.

Penetrates the Centres of Population in

ILLINOIS, IOWA,  
WISCONSIN,  
MICHIGAN,  
MINNESOTA,  
DAKOTA,  
NEBRASKA AND WYOMING.

Its TRAIN SERVICE is carefully arranged to meet requirements of local travel, as well as to furnish the most attractive routes for through travel between important

### TRADE CENTERS.

Its EQUIPMENT of Day and Parlor Cars, Dining and Palace Sleeping Cars is without rival.

Its ROAD-BED is perfection, of stone-ballasted Steel.

The North-Western is the favorite route for the Commercial Traveler, the Tourist and the Seekers after New Homes in the Golden Northwest.

Detailed information cheerfully furnished by

**JNO. S. GEORGE,** Commercial Agent, Milwaukee, Wis.  
**MARVIN HUGHITT, H. C. WICKER,** Vice-Pres't and Gen'l. Manager. Traffic Manager.  
**E. P. WILSON,** Gen'l. Passenger Agent.

## THE ASHLAND MILWAUKEE, LAKE SHORE & WESTERN RY

IS THE DIRECT AND MOST POPULAR LINE AND Through Sleeping and Parlor Car Route

FROM CHICAGO and MILWAUKEE

TO SHEBOYGAN, MANITOWOC, APPLETON, NEW LONDON AND WAUSAU, TO ALL THE IMPORTANT TOWNS IN THE Gogebic, Penokee and Montreal Iron Ranges, HURLEY, BESSEMER, IRONWOOD, WAKEFIELD AND GOGEBIC,

TO ASHLAND, SUPERIOR and DULUTH, To all Fox River Manufacturing Cities

AND The Lumbering Districts of Northern Wisconsin and Michigan.

**SPORTSMEN** The best Fishing and Hunting in the NORTHWEST reached by the ASHLAND ROUTE. Send to the General Passenger and Ticket Agent for Descriptive and Illustrated Publications, Maps, Folders, Time Cards and General Information.

CHICAGO OFFICE, 114 CLARK ST.

**C. L. RYDER, ERNEST VLIET,** General Agent, Gen'l. Pass. & Tkt. Agt.

**H. F. WHITCOMB, GEO. S. MARSH,** General Manager, Gen'l. Pass. & Tkt. Agt. MILWAUKEE.

## Milwaukee & Northern R. R. SHORT LINE

BETWEEN CHICAGO, MILWAUKEE, Menasha, Neenah, Appleton, Depere, Green Bay, Ft. Howard, Marinette, Menominee, IRON MOUNTAIN.

3 EXPRESS TRAINS DAILY 3  
EACH WAY  
BETWEEN Chicago, Milwaukee, Appleton and Green Bay.

2 EXPRESS TRAINS DAILY 2  
EACH WAY  
BETWEEN CHICAGO, MILWAUKEE, Menominee and Iron Mountain.

Elegant Pullman Palace Sleeping Cars on all Night Trains

### CONNECTIONS.

At Milwaukee, in New Passenger Station with C. M. & St. Paul R'y and Wisconsin Central Line. At Plymouth, with C. & N. W. R'y for Sheboygan, etc.

At Menasha, with W. C. Line.

At Neenah, with W. C. Line.

At Appleton, with M., L. S. & W. R'y and C. & N. W. R'y.

At Forest Junction, with M., L. S. & W. R'y.

At Green Bay and Ft. Howard, with G. B. W. & St. P. R. R. and Stage and Boat for Sturgeon Bay.

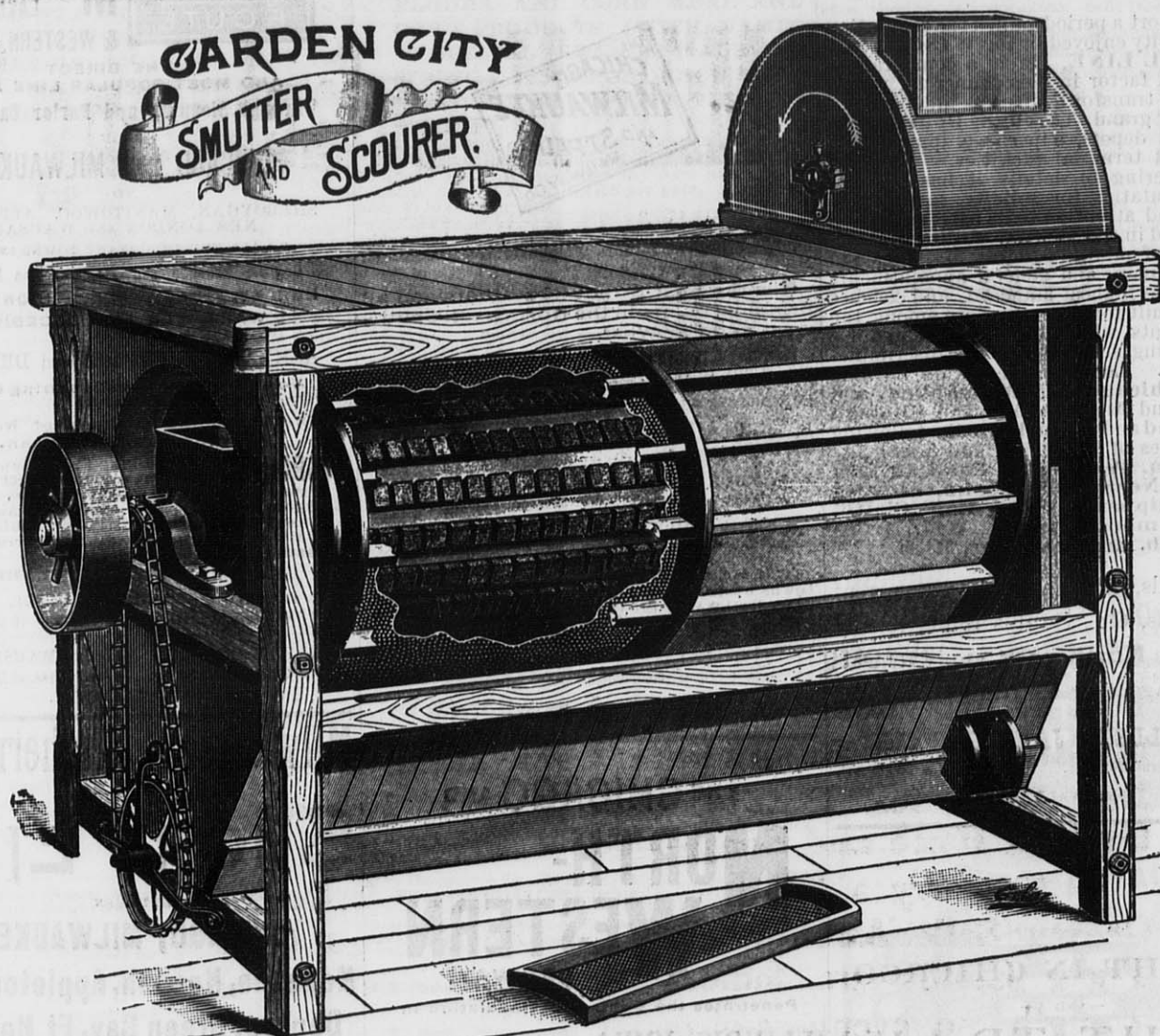
At Oconto Junction, with M., L. S. & W. R'y for Oconto.

At Menominee, with C. & N. W. R'y.

At Iron Mountain, with C. & N. W. R'y.

**O. F. DUTTON, W. B. SHEARDOWN,** General Supt. Gen'l. Ticket Agent.





## New "Era" in Grain Cleaning!

WE wish to announce to the Milling fraternity the machine above illustrated for the purpose of producing **CLEAN GRAIN**. Has even no competition.

For Further Particulars, Address

# GARDEN CITY MILL FURNISHING CO.

CHICAGO, ILL.



# The Jonathan Mills Manufacturing Co.

MANUFACTURERS OF

## SPECIAL FLOUR MILL MACHINERY.

WE SHALL MAKE THE **Jonathan Mills Universal Flour Dresser** OUR LEADING SPECIALTY.

THIS Machine has built for itself a National Reputation solely through its Superior Merits, and stands to-day a Peer to everything in the bolting line, not alone in **Flour Milling** but for **Buckwheat, Corn Meal, Electric Carbon, Dry Lead for Paints, Salt, Sugar, Foundry Facings, Ground Bone and Soapstone.**

We carry a full line of **Heidegger & Co.'s** Celebrated **Crown Silk Anchor Bolting Cloths and Grit Gauzes.** These Cloths are famous the world over for their great strength and evenness of count.

We have the most experienced cloth makers, and can insure you as good making up of your cloth as can be made anywhere. GIVE US A TRIAL ORDER.

The Empire Manufacturing Company furnish us with White Special Webbing that is very strong, pliable and much less elastic than colored webbing or ticking. By favoring us with your cloth orders for any style of Reel or Purifier, you can rely on getting Superior work at satisfactory prices.

We also furnish the very best **Wire Scalping Cloths** made up to fit any kind of Reel.

We shall at once issue a forty or fifty page pamphlet that will interest every one in the Milling business.

WE EARNESTLY SOLICIT YOUR CORRESPONDENCE AND TRADE. ADDRESS

# THE JONATHAN MILLS M'F'G CO., CLEVELAND, OHIO.



# MILL MACHINERY MANUFACTORY

ESTABLISHED

1851.

Complete large or small roller mills, with power included, furnished in one contract  
 - - and price, using our automatic feeding roller mills and new style round reel - -  
 - - - - flour dressers, and making a compact and easily set up outfit. - - - -

WE ALSO MAKE A SPECIAL

## FRONTIER ROLLER MILL

Warranted, costing in running order, including power and building, only \$4,000.

All Machinery of the Highest Grade, and our Prices Very Reasonable.

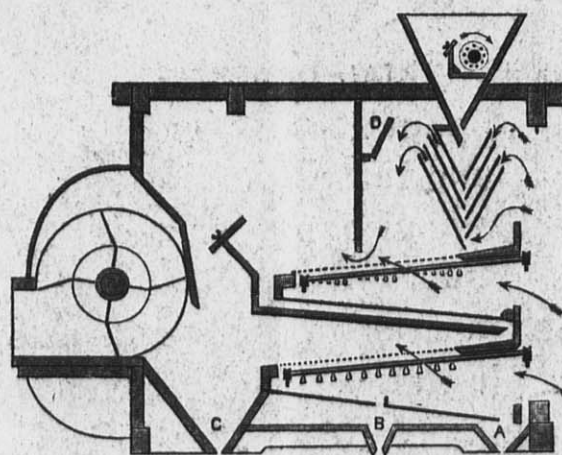
All are invited to state their wants and get our low proposals, either for new mills or to remodel buhr mills. Send for new and interesting circulars.

OUR ROLLS ARE LICENSED BY THE C. R. M. CO.

## NORDYKE & MARMON CO., Indianapolis, Ind.

## THE · GARDEN · CITY · PURIFIER !

Superior  
to any  
Purifier made



The BEST  
Cloth Cleaning  
Device

OVER FIVE THOUSAND IN USE

For Prices and further particulars address

Garden City Mill Furnishing Company,  
CHICAGO, ILL.